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THE SIGHT-SAVING REVIEW

June, 1934

"Let There Be Sight"

Volume IV
Number 2

PUBLISHED QUARTERLY BY
THE NATIONAL SOCIETY FOR THE
PREVENTION OF BLINDNESS, INC.

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Price $2.00 a year; single copies 50 cents

Published quarterly by the National Society for the Prevention of Blindness, Inc., Office of Publication, 1315 Cherry Street, Philadelphia, Penna.; Editorial Office, 50 West 50th Street, New York, N. Y.

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Application pending entry as second-class matter at Philadelphia, Pa., Postoffice.

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The Romance in the Movement for the Prevention of Blindness

William Campbell Posey, M.D.

GREAT causes begin with great personalities. Here is told the story of the humanitarians who brought into existence the movement for prevention of blindness

THE series of events which led to the prevention of blindness movement were so striking and unusual that they may well be designated as romantic; and those taking part in the movement were so charitable and public spirited, and exhibited such a high degree of patience and industry and such stubborn determination for the success of the object they had in view, that they may well be grouped together as partners in the prevention of blindness.

A recent article appearing in the SIGHT-SAVING REVIEW* included such a succinct account of the history of the control of ophthalmia neonatorum that I can do no better than to quote it:

"One hundred and fifty odd years ago, a German physician, Quellmaltz, pointed out a possible connection between the strange malady known as 'babies' sore eyes' and the discharge present in the birth canal of the mother. After many years, in 1808, Dr. Gibson, an Englishman, quietly repeated this observation, and added that with proper care in cleansing the maternal passages and in wiping the baby's eyes free of mucus after birth, much might be done to prevent the occurrence of this infection which so discouragingly and so frequently led to lifelong blindness. Had Gibson lived a hundred years later, he might have met with the honor of a prophet, but his colleagues of his own time paid little or no attention to his observation. They explained to the distressed

* Preventing Blindness Through Social Hygiene Co-operation, Lewis H. Carris, Vol. IV, No. 1, March, 1934, p. 29.

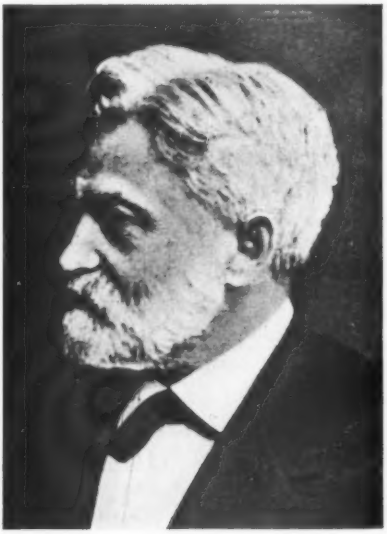
mothers of babies who had lost their sight in this way that it was caused by a peculiar constitution of the atmosphere; by an unbalanced condition of the alimentary canal; by cold drafts or the sudden change the child underwent in coming into a chilly world. So thorough was the belief in the causal rôle of cold, that the Spanish Cortes, in 1837, decreed that all babies be baptized with warm water, since the cold water commonly employed was so often followed by sore eyes and, in many cases, by blindness."

Karl Siegmund Franz Credé

There was born in Germany the early part of the past century Karl Siegmund Franz Credé. Credé was born in Berlin, and there he studied obstetrics and gynecology; in 1856 he was chosen head of the lying-in establishment in Leipzig, in which capacity he remained until 1892. As a result of years of experimental studies which he instituted to find an agent to prevent ophthalmia neonatorum, in 1884 Credé published his epochal treatise on the subject, in which he stated that "if a two per cent solution of silver nitrate is dropped into an infant's eyes directly after birth the pus germ producing ophthalmia neonatorum could be killed and the development of the disease prevented." Statistics showed that in certain classes of cases the disease developed in ten per cent of the children in which the solution was not used, and in but 0.17 per cent after the solution has been applied. This was a stupendous achievement and makes Credé one of the ranking benefactors of the human race.

The last century saw many changes in the condition of the blind. Schools for their education had been founded in Boston, New York and Philadelphia. Such wonders were wrought as the development out of blindness, deafness and dumbness into our social world of the notable Laura Bridgman and Helen Keller, who was aided by her remarkable teacher, Anne Sullivan Macy. The magnitude of the undertaking is vividly described in Mrs. Macy's recently published autobiography.

Thousands of other pupils had their lot improved as well and their lives made happier by the splendid equipment and teaching in these schools and in others in various parts of the country. Hospitals established in these three cities one hundred years ago administered to the needs of those with diseases of the eye and,



Dr. Karl Sigmund Franz Credé
1819–1892

Director in the Lying-In Hospital in Leipzig from 1856 until his death in 1892; discoverer of the prophylactic method, since known as the "Credé method," by means of which the sight of many infants has been saved.

Dr. Ernst Fuchs, 1851–1930

Professor of ophthalmology in Liége at the time he wrote his essay on "The Causes and the Prevention of Blindness," which won first prize in the competition sponsored by the London Society for the Prevention of Blindness more than fifty years ago; later renowned professor of ophthalmology in Vienna.

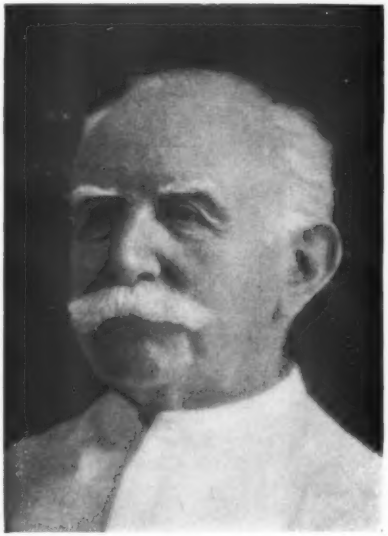
maintaining their activity during the past century, have relieved blindness in many thousands of cases.

Yes, much was done to relieve and teach the blind in the past century, but no thought was given to the prevention of blindness; no devices erected to avoid mechanical injury to the eyes, and but little thought to the dangers of contagion. Napoleon's soldiers came fresh from Egypt and many with eyes dripping with germs of trachoma were let loose to carry the infection all over Europe.

But Credé's discovery opened a new field and made the world conscious that many cases of blindness might be avoided. This was particularly so in England, where the Englishmen—Dr. M. Roth and Dr. R. E. Dudgeon—gathered a group of friends about them and formed the London Society for the Prevention of Blindness. This pioneer organization, realizing that the dangers of ophthalmia neonatorum to sight must be appreciated by laymen as well as by the medical profession, issued a number of explanatory leaflets for popular circulation. To enlarge their campaign and to make the knowledge of the dangers of ophthalmia neonatorum widespread, the Society determined upon still more comprehensive measures, and, at the Fourth International Congress for Hygiene, which met in Geneva in 1882, offered a substantial prize for the best essay on the Causes and Prevention of Blindness. All honor, then, to Drs. Roth and Dudgeon, who instituted the London Society and started this popular movement.

Dr. Ernst Fuchs

And now another great man and his clarifying work came upon the scene—Dr. Ernst Fuchs, an Austrian, but professor of ophthalmology in Liége at the time, later to become professor in Vienna and the beloved dean of ophthalmology the world over. He was an interested worker for prevention of blindness until the day of his death a few years ago, at 80 years. His treatise won the prize and was published in the *Annales d'Oculistique* in 1882. It was soon translated into English and German and other languages, and has at all times been regarded as a classic. It differentiated the various diseases causing blindness and outlined how best they might be prevented—a big subject treated by a master hand.



Dr. Lucien Howe, 1848–1928

Leader in the fight against ophthalmia neonatorum in the United States; author of laws which made the employment of the Credé method obligatory in many states; called "father of ophthalmia neonatorum legislation."

Edith and Winifred Holt

(Now Mrs. Joseph Colt Bloodgood and Mrs. Rufus G. Mather, respectively)

Lifelong workers for the blind and for prevention of blindness; responsible for the census of the blind in New York State, the report of which was instrumental in arousing local and, later, national interest in a prevention of blindness movement.

Having accomplished the feat of putting the work of Fuchs before the world, "the London Society seems to have gone into dissolution, as nothing more is heard of it," as Dr. Park Lewis stated it in the 1929 De Lamar lecture.

Dr. Lucien Howe

Another forceful character now appears upon the scene—an American, Dr. Lucien Howe, of Buffalo. Dr. Howe had become so impressed by Credé's work and Fuchs' treatise, and the pamphlets of the London Society, that he went to Egypt in 1887 to study purulent ophthalmia in its most prolific area. Returning to America, he commenced an active campaign against ophthalmia neonatorum in the United States and caused laws to be passed which entitled him to be called "the father of ophthalmia neonatorum legislation."

Howe showed in papers which he published in 1887 that about 25 per cent of all inmates in asylums for the blind were victims of ophthalmia neonatorum. It is interesting to note that the records of recent years show reductions of 75 per cent in ophthalmia neonatorum as a cause of blindness, all of which was largely effected through Dr. Howe's efforts in having proper legislation passed.

Dr. Howe was interested also in hereditary eye defects and, as president of the Eugenics Research Association, gave a masterly address on "The Control by Law of Hereditary Blindness." Before his death in 1928, at 80 years, he established the Howe Laboratory of Ophthalmology at Harvard and became its first director, the Laboratory having been endowed by Dr. Howe and his family by gifts of one million dollars.

Winifred and Edith Holt

Dr. Howe's beneficent influence in the reduction of ophthalmia neonatorum may be traced to the interest which he aroused in the New York State Medical Society and the American Ophthalmological Society, which caused them actively to work for the legal control of ophthalmia neonatorum. When the measure was presented to the Governor of the State of New York for his signature, he appointed a Commission to Investigate the Conditions of the

Dr. Park Lewis

President of the Commission to Investigate the Conditions of the Blind in New York State, the report of which was so instrumental in the establishment of the national movement for prevention of blindness; active in campaigns against ophthalmia neonatorum; vice-president of the national, as well as the international, association for the prevention of blindness; lifelong friend of the blind.

Louisa Lee Schuyler, 1837–1926

Descendant of distinguished forebears; philanthropist, humanitarian and organizer; she may be designated as the "patroness saint" of the National Society for the Prevention of Blindness, whose active interest was aroused in preventing blindness.

Blind in New York State, and to report their findings to him. It was then that two young women already interested in the blind—the Misses Winifred and Edith Holt, now Mrs. Rufus Graves Mather and Mrs. Joseph C. Bloodgood, respectively—offered their services, and the gentler sex began to play its part. These two ladies dropped all social engagements and their home was filled with statisticians and typists, and all their spare time was devoted to taking a census of the blind in New York State; in fact, Miss Edith Holt was director of the Census Bureau of the Commission. The report was finished and transmitted to the legislature April 10, 1907. This project was accomplished under the direction and initiative of another devoted pioneer in conservation work and a colleague of Dr. Lucien Howe—Dr. Park Lewis, of Buffalo, who was president of the Commission.

Dr. Park Lewis

Dr. Lewis is vice-president of the National Society and our leader in the conservation movement. His has been the voice which kept the movement alive in its infancy, and is still active in our councils. He was chairman of the Committee of New York State to Investigate the Condition of the Blind, in 1906, and supplied the legends to the illustrations which the book contained. Many of the copies of the report issued by Dr. Lewis' committee went to various state departments, where they were filed away and lost sight of. One copy fell on better soil, and it is here that another dominant figure, Miss Louisa Lee Schuyler, comes into the foreground.

Louisa Lee Schuyler

Describing Louisa Lee Schuyler's entrance into the work, Dr. Lewis stated in the De Lamar lecture:

"Returning home one winter's evening at the end of a busy day Miss Schuyler finds on her table a heavy volume filled with statistical records on the extent, the causes and the prevention of blindness. It looks stupid and uninteresting as she turns page after page of figures and she is about to lay it wearily aside, when some startling pictures meet her eye. These are groups of little children at the most endearing period of their lives. They are

growing out of babyhood and are from the kindergarten of a great state school. Their faces are beaming with sunshine, some of them are standing by the seaside playing in the sand, others with

"Tuning Up" for the Orchestra
Sunshine Home for Blind Babies, Brooklyn, N. Y.

"None of these children would have been blind if a single drop of a harmless preparation had been put in each eye on the day that he was born."

One of the illustrations which caught the attention of Louisa Lee Schuyler, arousing her indignation at such social carelessness and inspiring her to acquaint the public with the facts, thereby forming the foundation for the present National Society for the Prevention of Blindness.

simple instruments are making a little orchestra. But these sweet babies, wholly unconscious of the pathetic fate in store for them, are, every one of them, absolutely blind. The tragedy is intensified

by the legends appearing beneath the pictures. On one are the words, '*Needlessly* blind.' On another is the startling statement that 'Had the right thing been done, at the right time, and in the right way, the eyes of everyone of these little ones would have been saved.' Another picture is that of an otherwise attractive lad whose sightless eyes show the neglect of proper measures of protection at birth, and finally a group picture is shown with seventy-five of the pupils, one-third nearly of the entire school population, all of whom are either wholly or partially blind as a result of ophthalmia neonatorum, a disease the nature of which is fully understood, which might have been avoided or controlled had simple prophylactic or therapeutic measures been employed at the time that the infant came into the world.

"The dreadfulness of this prodigal, one might almost say of this criminal waste of the most precious sense that we possess, profoundly affected this remarkable woman. She was not one who expended her emotions in expression of sympathy, 'Can it be possible,' she says, 'that in a civilized country like our own, one in which the most scientific methods are supposed to be in use, babies are allowed to lose their eyes when they might have been saved?'"

Later, a luncheon conference instigated by Miss Winifred Holt was held in Miss Schuyler's home; those attending were: Dr. Lewis, Miss Winifred Holt, John M. Glenn, of the Russell Sage Foundation, and Dr. J. Clifton Edgar. Miss Schuyler asked the cost to start a movement to acquaint the public with the menace of ophthalmia neonatorum, and what measures might be taken to prevent this dire disease, so fatal to the sight. When told $3,000, she promised to raise the amount to $5,000 and to interest friends and others in the movement which grew into the National Society for the Prevention of Blindness, which has attained such remarkable growth and success.

The granddaughter of illustrious ancestors—General Philip Schuyler, the real hero of Saratoga, and Alexander Hamilton, the first Secretary of the Treasury—Miss Schuyler possessed an inheritance of leadership and intellect which undoubtedly did much to popularize the movement and endow the Society with life.

National Society for the Prevention of Blindness

The Society which she founded and conservatively conducted, appealing to the humanity of the nation, grew rapidly, giving information to the masses how sight might be conserved and blindness averted, by lectures, pamphlets, the radio, newspapers and every possible source of spreading the information about its work. Its affairs have been conducted by a group of prominent men and women, among whom are a number of leading ophthalmologists who see that the organization is kept abreast with the latest discoveries and advances in science. It is in close association with the American Medical Association—that comprehensive body of medical men—and co-operates with it in its efforts to combat blindness.

As has well been said by Van Cleve,* "Whoever learns that half of all blindness is preventable experiences some sort of emotion. It may be only a mild wonder why someone does not do something about the matter or may assume the opposite extreme of a burning indignation or divine pity, inspiring action—vigorous, persistent, effective."

As we have seen, the discovery of Credé brought realization to the world that much of blindness was needless. Needless blindness! It was this phrase which inspired those who took part in the evolution of the movement just recounted. It was this which caused Miss Schuyler to act and to have broadcast to the people of our country that blindness in many instances was needless and preventable. The purpose of this Society has been to carry on what she initiated and to insist that preventable blindness should be prevented, and that neither sluggish legislators, careless nurses, nor indifferent doctors should stand in the way of progress, or fail to make use of the measures given by Credé and others to save sight.

* Hygiene of the Eye, W. C. Posey, Philadelphia: J. B. Lippincott Co., p. 328.

A Program of Eye Health in a School System*

Mary Emma Smith, R.N.

We present a tentative outline for the guidance of school systems desiring a program of eye health

SOME time ago the National Society for the Prevention of Blindness responded to a request for definite assistance in developing an eye health program which could be fitted into the school system, by drawing up a tentative program. This program has since been submitted to health departments, school administrators, oculists, and parent-teacher associations, and modified according to the various suggestions received.

In addition to the objectives for a program of sight conservation in a school system and the activities which should be included in every school, the material contains two distinctly new features. One is the recommendation of a special eye record for every child who is referred to an oculist for an examination. This record is designed to be a part of the record of the child's physical status that is kept by the school. The other recommendation is an appraisal sheet, based in large part upon the *Standards of School Lighting*, for the use of teachers and others in studying the factors in the classroom environment that affect eye health. Both of these suggestions have evidently met a definite need, as they have been used in a number of places. The appraisal sheet has been utilized by teachers as the basis for units of work on eye hygiene, the pupils making a large part of the survey. Teachers and school nurses have found it to be of educational value to them as well as to the pupils.

* Note.—The National Society for the Prevention of Blindness, 50 West 50th Street, New York City, is prepared to give more detailed information upon all phases of the subject, and to assist school systems in working out programs of eye health.

This tentative program of eye health in a school system has been circularized, in mimeographed form, for more than a year, throughout the United States, as well as Alaska, Canada, Cuba, England, Turkey, Hawaii, Panama, and Porto Rico. Since the demand continues to be great, it is felt advisable to make it available in printed form. This does not in any way alter the tentative nature of the program. Suggestions are gratefully received.

General Objective

1. To build within the school system a program for using all of the community's facilities to the best advantage, so that everything possible may be done to conserve and promote eye health.

Specific Objectives

1. To emphasize the fact that eye health is a part of the general health program of the school.
2. To develop a co-operative relationship with all agencies in the community having a contribution to make toward a program of eye health.
3. To encourage the family to assume its responsibility for the conservation of eyesight and the correction of eye defects; but in cases needing assistance to co-operate in making available the resources in the community for remedial care.
4. To provide a way for the various workers in the school system to share their knowledge of the child's physical condition, so that the common knowledge can be used to the best advantage for the child.
5. To establish a co-operative working relationship with the ophthalmologist so that all knowledge of the child's condition may be used to enhance his efficiency.
6. To give the child the experiences which will enable him to understand the why and wherefore of eye care and to assume his share in the conservation of his sight.

Essential Activities in the School Program for Eye Health

1. Encouraging continuous observation to detect symptoms of communicable and other eye diseases.
2. Making eye inspections a part of the physical examination.
3. Securing adequate medical service for all children with visual defects.
4. Surveying the school environment in its relation to eye health, such as: natural and artificial lighting, shades, coloring of walls, and so forth.
5. Teaching eye hygiene and developing, through experience, the child's ability to appreciate the essentials of eye health and to act accordingly.
6. Securing special provisions for those handicapped with serious eye conditions.

Steps in Organizing the Sight Conservation Program

1. To enlist the co-operation of the school personnel: school administrator, teacher, school physician, school nurse, janitor, and others.
2. To develop co-operation with the official health authorities.
3. To secure the active co-operation of physicians, clinics, and hospitals.
4. To secure co-operation of welfare agencies, Parent-Teacher Associations, Red Cross, civic clubs, and others.
5. To develop a definite program of procedure co-ordinating the activities of all the groups.

Details of Procedure

1. Control of communicable eye diseases.
   a. Procedures for carrying out board of health regulations.
2. Eye inspection.
   a. Persons responsible for making tests.
   b. Instructions for testing visual acuity and muscle balance.
   c. Standards for equipment for making tests.
   d. Standard of illumination on chart.
   e. Frequency of tests.
   f. Code for recording results of tests.

3. Follow-up of those with suspected eye defects to secure continued medical supervision.
   a. Basis for referring children for medical examination.
   b. Persons responsible for carrying on follow-up program.
   c. Special record for each pupil referred for eye examination. (Suggested form on pp. 106 and 107.)
   d. Procedure for making information about eye condition continuously available to teacher, nurse, and others who will need it either in the securing of corrections or the handling of the child.
4. Survey of school environment.
   a. Appraisal form based on the revised *Standards of School Lighting*. (Suggested form beginning on the bottom of this page.)
   b. Persons responsible for making survey.
5. Health Education.
   a. Inclusion of adequate material on eye hygiene in syllabi.
   b. Persons responsible for teaching eye hygiene.
   c. Use of classroom equipment and procedure as a demonstration of good eye hygiene.
6. Provisions for pupils with serious visual handicaps.
   a. Plan for continuous medical supervision.
   b. Plan for adjustment of the educational processes and media to their needs.

* * * *

The Appraisal Form

Essentials of Schoolroom Environment Recommended for Conservation of Vision of School Children*

School_____

Classroom_____

Date_____

* Standards given here are based chiefly on the revised *Standards of School Lighting*. (Copies of the latter are distributed by the American Standards Association, the Illuminating Engineering Society, and the American Institute of Architects.)

A. Natural Lighting

Recommended Good Practice	Minimum Requirement	Actual Condition in Classroom
1. Glass Area		
(a) Amount as large as structural and architectural limitations permit. (From 20% to 25% of the floor area.)	Amount 18% of the floor area, if windows are 3 ft. above floor, or 16% of the floor area, if windows are 4 ft. above floor.	_____
(b) Distance from floor to bottom of glass 4 ft.	Distance from floor to bottom of glass 3 ft.	_____
(c) Distance from floor to top of glass at least ½ width of room.	Distance from floor to top of glass plus 6 in. at least ½ width of room.	_____
(d) Distance from front of room to window 4 ft. to 8 ft., or at line of front row of desks.	Distance from front of room to window not more than 8 ft.	_____
(e) Distance from rear of room to window as little as practicable.	Distance from rear of room to window not more than line at front of last row of seats.	_____
2. Intensity		
(a) Minimum illumination on desks and blackboards from 12 to 8 foot-candles.	Minimum illumination on desks and blackboards not less than 5 foot-candles.	_____
3. Direction of Light		
(a) From left of pupils only.	From left and rear of pupils (with less than 50% coming from rear).	_____
(b) Seats turned slightly away from windows.		_____
4. Exposure		
(a) Windows facing northeast or northwest, or east or west.	Windows facing any direction except north or south.	_____

Recommended Good Practice	Minimum Requirement	Actual Condition in Classroom
5. Diffusion		
(a) Shades of sufficient density so that the surface brightness will not cause glare when sun shines on them.	Translucent shades on all windows receiving light directly from sun or sky.	
(b) Shades having double rollers placed near center of window and working upward and downward, or placed at center and bottom working upward.		
(c) Shades of durable quality to prevent cracking and of ample size and with backing between rollers to prevent leakage of light.		
6. Distribution		
(a) Where light from sun or sky is obstructed, refracting glass to be used in upper parts of windows to redirect light to far side of room.		
(b) Mullions between windows narrow to prevent shadows.		
7. Absence of Glare		
(a) Workplaces so arranged that pupils do not face windows.	No seating plan, or arrangement of blackboard, which compels pupils to face windows.	
(b) Walls of adjacent buildings visible from windows finished in color light enough to reflect light but dull in finish to prevent glare.		

B. Artificial Lighting

Recommended Good Practice	Minimum Requirement	Actual Condition in Classroom
1. Intensity		
(a) Minimum illumination on desks and blackboards from 12 to 8 foot-candles.	Minimum illumination on desks and blackboards not less than 5 foot-candles.	_____
2. Type of Luminaire		
(a) Indirect units, which direct all light to ceiling or semi-indirect units, directing more than half of light to ceiling.	Luminaires may be of indirect, semi-indirect or direct type, provided they meet the qualifications specified below.	_____
(b) Special lighting for blackboards.		
3. Distribution		
(a) Spacing between luminaires not over 1½ times the distance from desk top to luminaire (or to ceiling if using indirect type).	Spacing between luminaires limited sufficiently so that the relation of maximum to minimum illumination on work planes shall not exceed 4 to 1.	_____
(b) Equal spacing between luminaires (in either direction); distance between wall and luminaire about ½ of space between luminaires, if there is an aisle next to wall, or ⅓ of space if work place is next to wall.		_____
(c) Size and shape of enclosing globes selected to suit spacing of luminaires in order to prevent marked shadows.		_____
(d) Control apparatus so arranged that illumination in room can be equalized by turning on light in darker places only.		_____

Recommended Good Practice	Minimum Requirement	Actual Condition in Classroom
4. Diffusion		
(a) Luminaire globes translucent and sufficiently dense to conceal light source.	Same.	
5. Absence of Glare		
(a) Luminaire globes of low surface brightness to prevent glare (under 3 foot-candles). Recommended minimum diameters of enclosing globes: 75-watt lamps—10 in. globe 100-watt lamps—12 in. globe 150-watt lamps—14 in. globe 200-watt lamps—16 in. globe 300-watt lamps—18 in. globe	Luminaire globes of surface brightness not to exceed 3 foot-candles per square inch.	
(b) Luminaires placed well above line of vision of pupils.	Same.	
(c) Luminaires placed only against light background.	Same.	
6. Maintenance		
(a) Selection of light units which can be easily cleaned.	Same.	
(b) Regular thorough cleaning of luminaires sufficient to prevent reduction in intensity of illumination.	Regular thorough cleaning of luminaires at least once a month for indirect or once in three months for direct units, more often if under dusty conditions.	
(c) Regular inspection of lighting to include testing of intensity and replacement of bulbs, etc., sufficient to maintain illumination standards set.	Regular inspection of lighting to include testing of intensity and replacement of bulbs, etc., at three-month intervals.	

C. Classroom Decorations, Furnishings and Equipment

Recommended Good Practice	Minimum Requirement	Actual Condition in Classroom
1. Color		
(a) Ceiling very light in color and having an 80% reflection value, preferably white, ivory, or light cream.	Ceiling light in color and having a reflection value of not less than 70% with direct lighting or 75% with indirect.	
(b) Upper walls having a reflection value of 50%. Suitable colors are cream, light green, light gray, light buff, and very light blue.	Same.	
(c) Dark colors may be used below level of window sills.	Same.	
2. Finish		
(a) Only dull finishes on walls, ceilings, blackboards, woodwork, furniture, etc. No glass or shiny polished surfaces.		
(b) Unglazed paper in books, notebooks, etc.		
3. Size		
(a) Seats adjustable for height and adjusted to present users.		
(b) Type in books large enough to be easily read by pupils. (See suggestions on approximate size of type by age.)		
(c) Charts, maps, etc., with minimum of fine detail.		
(d) Writing materials (chalk, pencils, ink, etc.) selected to produce large, distinct writing.		

Recommended Good Practice	Minimum Requirement	Actual Condition in Classroom
4. Arrangements and Adjustments		
(a) Desk tops adjustable to lift to an angle.		_____
(b) Work places selected in relation to intensity, direction, etc., of light.		_____
(c) Shades, lights, etc., adjusted to meet changing conditions during the day.		_____
(d) Daily program planned to avoid difficult or prolonged eye work (especially for child with defect).		_____
(e) Daylight unobstructed by window curtains, pictures pasted on panes, books or plants on window sills.		_____
(f) Cleanliness of blackboards, books, illustrative materials, etc., to insure legibility.		_____
(g) Blackboard writing, posters, etc., placed near eye level of pupils.		_____

Glossary

1. **Intensity** of light is its amount or strength. It is measured in foot-candles.
2. **Foot-candle** is the unit of measurement of intensity of light. The amount of light produced on a surface by a single candle (of prescribed standard size) which is situated at a distance of one foot from that surface, is one foot-candle.
3. A **foot-candle meter** is an instrument for measuring the intensity of light.

4. The **Illuminometer** is a new type of foot-candle meter for measuring the intensity of light. It works on the principle of the so-called "electric eye." That is, it contains a light-sensitive plate by means of which light is turned into electricity, which in turn moves the pointer on a dial marked off into foot-candle units.

   Weston Electrical Instrument Corporation, Newark, New Jersey. Model 614—list price $50. Schools and health departments are entitled to an appreciable discount.

   Where school and health departments do not have foot-candle meters available for use of teachers, local electric companies may be willing to lend this equipment.

5. **Diffused light** is light which is scattered in all directions as it comes from the light source or sources.

6. **Surface brightness** is the measure of the relation which the intensity of light from a surface bears to the size of that surface.

7. A **translucent** material is one which diffuses light as it passes through, so that objects may not be seen distinctly through the material.

8. **Refracting glass** has a ridged, rippled, or rough surface (on one or both sides) which bends (refracts) the rays of light as they pass through.

9. **Glare** is any light or brightness within the field of vision which is of such character as to cause discomfort, annoyance, interference with vision or eye fatigue.

10. **Mullions** are the supporting wall or window-frame spaces between glass areas.

11. A **lamp** is any source of artificial light (as an electric bulb, a gas flame).

12. A **globe** is a covering of clear or diffusing material used to protect a lamp or diffuse its light. Its size, shape, and material determines the distribution and diffusion of the light.

13. A **luminaire** is a complete lighting unit, including the light source, enclosing globe and necessary fixtures.

14. **Distribution** is the term used to describe the relative intensity of light at various places in an area (as a room).

15. A **watt** is the unit of measurement of the strength of an electric current. The wattage of a lamp (bulb) indicates the amount of current it requires, not the amount of light produced by it.

16. **Reflection value** (or reflection factor) is the proportion of light received by a surface which it in turn reflects. Color and maintenance affect the reflection value. The effect of color upon reflection is shown in the following figures which give the results of actual tests:

Color	*Percentage of Light Reflected*
White—new	82 to 89 per cent
White—old	75 to 85 " "
Cream	62 to 80 " "
Buff	49 to 66 " "
Ivory	73 to 78 " "
Gray	17 to 63 " "
Light green	48 to 75 " "
Dark green	11 to 25 " "
Light blue	34 to 61 " "
Pink	36 to 72 " "
Dark red	13 to 30 " "
Yellow	61 to 75 " "
Dark tan	30 to 46 " "
Natural wood brown stain	17 to 29 " "
Light wood varnish	42 to 49 " "

17. The **size of type** used in books is one of the chief measures of their legibility. Generally speaking, the larger the type, the greater the distance at which it may be read and the more easily it may be read. Young children, being farsighted, require large type. The following approximate sizes are recommended:

Age of reader	*Size of Type*	
	*Point type**	*Approx. height of capitals (incl. space between)*
Under 7 years	24	1/3 inch
7–8 years	18	1/4 inch
8–9 years	14	1/5 inch
9–12 years	12	1/6 inch
Over 12 years	10 or 11	1/7 inch

* A *point* is the printers' measure of the size of a letter. There are 72 points to the inch.

Eye Record

(To be used in connection with the School Health Record)

Name Sex

Address Date of birth

Parent or Guardian Address

Recommended for complete eye examination by Title

Secured written permission of parent for complete eye examination and use of drops

School Inspection

Date of Inspection School Grade

	Right eye	Left eye
Visual acuity—without glasses		
—with glasses (if worn)		
Lids		
Conjunctiva		
Cornea		
Iris & pupils		
Light reaction		
Obvious defect of muscles		

Symptoms noted by teacher or nurse: headaches granular lids

styes tearing blurring burning

itching secretion unusual posture while using eyes

Remarks (significant defects or illnesses of child or family, retardation, etc.)

Eye Record (continued)

Eye Physician's Examination

	Right eye	Left eye
Visual acuity—without glasses		
—with glasses recommended		

Diagnosis—Refractive error

Glasses ordered (give ℞)

Muscle balance, near

far

Ocular disease

Recommendations—

Glasses to be worn: constantly for close work only

Amount of eye work permissible: unlimited

limited (explain restrictions)

Should child be assigned to sight-saving class if such exists

Home treatment advised (specify)

Re-examination of eyes advisable (give approximate date)

Further diagnostic examination advisable (state nature of examination)

Examined by

(Note: Use space below for specific information on re-examinations, follow-up, etc.)

Trachoma in the United States*

C. E. Rice, M.D.

A downward trend in the prevalence of trachoma is reported for the United States; the disease has become especially rare in our large cities

Endemic Trachoma Area

This report deals with the trachoma problem of the native white population in the endemic trachoma belt of the United States. Trachoma in our large cities is today a rather rare disease. This is in apparent contrast to trachoma as found in many European countries. Figures emanating from ministries of public health in Europe frequently are findings from surveys in individual cities.

The endemic trachoma area of the native born white inhabitants of the United States of America stretches through the central portion of the country from the Allegheny Mountains to the eastern borders of Kansas and Oklahoma. It takes in most of eastern Kentucky, and part of adjoining West Virginia, eastern and central Tennessee, a portion of southern Illinois, all the southern half of Missouri and the northern half of Arkansas and the northeast corner of Oklahoma. The trachoma found in Missouri and Arkansas today originated from individuals with trachoma who came into these states from Tennessee and Kentucky in the early days of pioneer development.

The endemic trachoma area comprises, with few exceptions, the roughest and most mountainous terrain in the states involved. Until very recently, access to much of this area could be had only by horseback or on foot. Motor roads are gradually penetrating

* Discussed at meeting of the International Association for Prevention of Blindness and the International Organization for the Control of Trachoma, Paris, France, May 14, 1934.

this territory and with such development the control of trachoma will be much easier.

This endemic trachoma area comprises approximately 104,000 square miles (260,000 square kilometers), with a population in 1915 of 3,940,000. This area is more than three times the size of Ireland. From 1915 to 1930 the population in this area had increased to 4,220,000. The trachoma belt in Missouri, Arkansas and Illinois in this time decreased in population about 5 per cent while the rest, comprising parts of West Virginia, Tennessee, Kentucky and Oklahoma, increased 15 per cent. This fact illustrates that there has been much migrating from certain trachoma regions and into others. The increase in Kentucky, West Virginia and Tennessee has been due to the opening of great coal mines and increased industrial development in general.

Prevalence of Trachoma in Endemic Area

Considering the trachoma area as a whole, the estimated prevalence of trachoma in 1915 was approximately 14 per thousand population. In some well-defined regions within this area, as in eastern Kentucky, the estimated prevalence reached 17 in an area of 9,000 square miles. In one county of this Kentucky area the prevalence was actually found to be 90 per thousand population. In southern Illinois, in an area comprising 13 counties—5,000 square miles (12,500 square kilometers)—the prevalence was 4. In those regions that lost population, the percentage of drop in the prevalence of trachoma has been least, while in the areas that have increased in population from industrialization and development of coal mining there has been the highest percentage of drop in trachoma prevalence.

History of Trachoma Interest

In 1911, Dr. J. A. Stucky, an ophthalmologist of Lexington, Kentucky, read before the American Academy of Ophthalmology what was thought at the time to be a very alarming and exaggerated report concerning the prevalence of trachoma in eastern Kentucky. Following that report, and as a result of it, the American Medical Association and the Kentucky State Board of Health induced the United States Public Health Service to detail an

officer to look into the situation. Surgeon John McMullen made a trachoma survey in eastern Kentucky in 1912 and his report confirmed all that had been said by Dr. Stucky concerning the seriousness of trachoma in that state. It seems that Dr. Stucky was preceded by Dr. William Cheathem, an ophthalmologist of Louisville, who stated, in a medical meeting about eleven years before Dr. Stucky made his report, that 47 per cent of the inmates of the Kentucky School for the Blind were blind from trachoma. It is interesting to note that for the past several years the number of trachoma blind in this school has not been above 7 per cent.

Plan of Trachoma Control

In 1913, Dr. John McMullen started his plan of trachoma control that has been modified but little in the succeeding 20 years. This plan was based on the establishment of small temporary field hospitals at strategic points in the endemic area. The capacity of these hospitals ranged from 20 to 35 beds. The professional personnel connected with each hospital consisted of one eye physician and two to four nurses.

One or two nurses worked out of each hospital as field nurses. The importance of these field nurses has always been emphasized by those connected with this work. During the first 14 years' work in Kentucky, they covered a compact group of 27 counties over a mountainous terrain of 18,000 square miles (45,000 square kilometers) by horseback, mule-back and on foot. The common trail in those days was the bed of a shallow stream. The nurse's duty was to visit each individual home, examine the members of each family, get acquainted with them, win their confidence, revisit if necessary and get those individuals who showed pathology suspicious of trachoma to visit the nearest field hospital or attend a nearby field clinic. The field clinics were held at frequent intervals, often weekly at a certain point, for a month or more. The field clinics were held in churches, homes, courthouses, etc., by the eye physician in charge of the nearest field hospital. These field clinics were of both diagnostic and therapeutic nature. The suspicious cases seen by the nurses were usually examined and their eye condition diagnosed in these clinics, and many treatments were given here. Much educational work was accomplished by

the field nurse and the physician at the field clinics in matters pertaining to personal hygiene. The physician in charge of the field hospitals thus had three main duties: first, to work in the hospital; second, to supervise the work of the field nurses, and third, to hold the field clinics in his territory.

The more severe cases of trachoma were hospitalized while the milder cases were treated at field clinics by the eye physician who

Rude Method of Travel Necessary in Rural Districts

taught the patients how to treat themselves at home. Many operative field clinics have been held. By means of these operative clinics the usefulness of the hospitals has been augmented. The field nurses would assemble in a church or other public building a group of trachoma sufferers who needed special care or some operative procedure, as grattage, entropion correction, cantho-plasty, etc. Portable cots were set up for the patients and local women's clubs provided and served food to the patients. An operating room was improvised and the patients taken care of as each individual case required. Each operative clinic was planned

so that the patients might be kept under semi-hospital care for one week at least. These operative clinics can be held only during the warmer seasons in this country.

Main Points in Control Plan

The three main points in the general program have been thought of as follows:

1. Finding the individuals suffering from trachoma. This is not easy because of the primitive means of travel and isolated homesteads of many of these sufferers.
2. Getting the infected individuals under treatment. Often the families are suspicious of the motive of both nurse and doctor and several visits may be necessary before the parents will accept treatment or allow their children to receive care.
3. Educating the individual and his family in matters pertaining to eye hygiene especially when one or more members of a family have trachoma.

The work has not been based on school examinations or using the school as a place of treatment. It is our experience with trachoma in this country, that a school survey alone will never give a true index of the prevalence of trachoma in any territory. The trachoma child tends to quit school. The work is based on the individual homes which must be visited and every member examined by the field nurse—adults as well as children, grandparents as well as parents. It is surprising, the number of reports seen concerning trachoma surveys and trachoma work from different countries that deal apparently with children only. It would seem from many such reports that trachoma does not concern the adult.

This point of making the home rather than the school the unit in trachoma work is important enough to give the following illustration. In a trachoma survey made in a compact area in Tennessee, 30,277 children were examined in schools, and of this number only 213 were found to have trachoma. In the same territory, of 2,757 people examined in field clinics and in homes, 660 were found to have trachoma.

Co-operative Trachoma Projects

At present the trachoma work of the United States Public Health Service in co-operation with the respective State Health Departments is being carried on in the states of Missouri, Kentucky and Tennessee. The plan of work is as outlined above. In Missouri the work is centered at Rolla, a small city in the Ozark highlands. The work in this state has been going on about 11 years. In Kentucky the work is carried on from the city of Richmond at the western edge of the mountainous district of that state. Here the trachoma work has been in existence 19 years. In Tennessee the work is centered in the town of Gainesboro, a mountain town about 20 miles from the nearest railroad. Several areas have been covered in this state in the past 18 years.

Diagnosis of Trachoma

The diagnosis of trachoma has often led to heated disputes because of failure of authorities to agree on the clinical manifestations necessary to establish this disease as a clinical entity. The most extensively used system of classification in trachoma is based almost entirely on the pathological picture seen in the palpebral conjunctiva. The manifestations of trachoma in the lids are the least important part of the disease. The corneal manifestations are the most important and may even be primary. In any case, the corneal pathology makes its appearance early, usually within the first three months of the disease. Those doing research on trachoma etiology should confine themselves to cases showing corneal pathology, otherwise the question can be justly asked: "Was the condition really trachoma?"

It has been our practice not to be too hasty in making a diagnosis of trachoma early in the disease. We try to emphasize that there is no need of hurry. Many lid conditions are seen which we record as suspected trachoma. Such are kept under observation two or three months under a mild astringent, as 0.25 per cent zinc sulphate. In the presence of a thickened and inflamed mucous membrane with papillary or granular activity, together with manifest pannus or beginning pannus with cellular infiltration in the cornea, we feel more sure of our ground. In older cases we often see a quiescent or cicatricial lid with an active cornea.

Trachoma Therapy*

We do not believe that trachoma therapy has advanced much in the past fifty years. In the early case a grattage is usually done under local anesthesia and suitable treatment started. Without doubt, the elimination of any focus of infection in tonsils, teeth or sinuses helps to hasten the arrest of the disease. We have not found that balanced diets reinforced by vitamins have any direct benefit on the course of the disease. Diathermy and ultra-violet rays have been tried out with little success.

When all is said and done, almost any drug or chemical that is not too irritating to the cornea is probably beneficial in trachoma, if applied by swabbing or rubbing the conjunctiva.

We have ceased to use the word "cured" as applied to trachoma. It is impossible to say at the present time when a case is cured, if ever. The disease can be arrested as in tuberculosis or leprosy. This arresting is brought about by the formation of scar tissue in the sub-conjunctiva. Relapses are frequent. At least twenty-five per cent of our cases relapse two or more times.

Epidemiological Observations

It is our observation that trachoma is a family disease, meaning that it is spread largely within family groups. Very little trachoma is spread through the schools in this country. When we find a child with trachoma we are almost sure to find parents or grandparents, or both, with active trachoma. This point bears emphasizing that trachoma is found in all age groups and if the lid pathology found in any region is confined largely to children, the probabilities are that the condition is not trachoma.

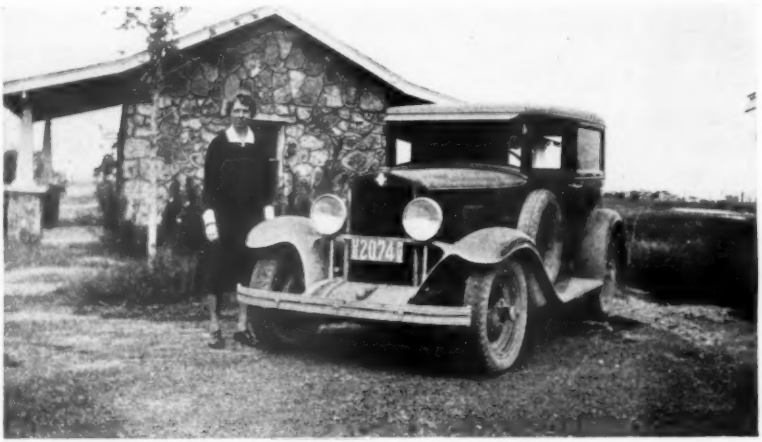
In field clinics we have been able to confirm MacCallan's observations made many years ago that a big percentage of trachoma becomes spontaneously arrested without damage to vision and without ever being treated. We are able to pick up the earmarks of past trachoma quite easily in these cases that come into field clinics out of curiosity—just to have their eyes examined though their eyes are now apparently normal.

During the time that the Public Health Service has been

* *Editor's Note:* In an effort to preserve the non-technical nature of the REVIEW, we are presenting here only an extract from the original of this section.

co-operating in this trachoma work, 16 professional wrestlers have been hospitalized. And we know of many other such professionals who have trachoma. In several we have been able to get a definite history of origin of the disease following a certain match. In one case the manager of the wrestler used mercurochrome in the athlete's eyes both before and after the match. In spite of such precaution the wrestler contracted the disease.

We have seen monocular trachoma in quite a few cases. It certainly occurs and may remain monocular several years without any effort on the part of the patient to prevent spread to the other



Typical U. S. Public Health Nurse in Trachoma Areas

eye. Usually, however, the other eye is involved within three weeks after the disease starts in the first eye.

This fact of monocular trachoma seems hard to reconcile with the idea that trachoma is a communicable disease. Some of these monocular cases have been studied under the corneal microscope to be sure there was not some vestige of past trachoma in the apparently normal eye. In most instances, when an individual who appears to have monocular trachoma is studied under a corneal microscope, it is discovered that the good eye has suffered from trachoma in the past and the condition has become arrested in that eye.

In most areas of the trachoma belt, body parasites are seldom seen in the trachomatous individuals. This applies to both external and internal parasites.

It is very exceptional to find one of these native born trachoma patients with a positive Wassermann.

A trachoma patient with an accompanying gonococcus infection of the conjunctiva has not been seen in this endemic area. The complicated trachoma that Wilson speaks of in Egypt is seldom seen in this area and yet the trachoma produces much blindness and near-blindness here. We believe it more logical to think of the corneal lesions as trachoma of the cornea.

Also the trachoma inclusion bodies are found in a high percentage of these cases, though we seldom have complicated trachoma as defined by Wilson.

We have never had an accidental trachoma infection in doctors, nurses or attendants connected with this work. For obvious reasons, deliberate human inoculation has never been attempted.

Damage Done by Trachoma Here

Something should be said concerning the damage to vision by trachoma in this area. Of 8,444 cases seen in the Kentucky area, 463 eyes had become entirely blind and 840 individuals had vision reduced to 20/200 or less from corneal damage. Out of 15,450 cases seen in Missouri, Tennessee and Kentucky, there were 1,835 individuals who had entropion corrections. About 12 per cent of the cases seen in Missouri have vision reduced to 20/200 or less in both eyes by trachoma of the cornea. Of those who have vision so reduced, 3 per cent are under 30 years of age.

Downward Trend in Trachoma Prevalence

The estimated trachoma prevalence for the whole white trachoma area in the United States of America in 1915 was 14 per thousand for a population of 3,940,000. The estimated prevalence in 1930 in the same area was 10 per thousand for a population of 4,220,000. In 1915 the eastern Kentucky region showed a prevalence of 17, which by 1930 had dropped to 7. The trachoma belt in Missouri in 1923 had an estimated prevalence of 28 for a population of 475,000. By 1930 this had dropped to 22 per thousand in a population of 550,000.

The number of trachoma blind in Missouri has not become less. However, this was not expected so soon and a generation of constant effort will probably be necessary before there is a lessening in this number.

With our present lack of knowledge of trachoma it is probable that educational efforts in prevention of the disease accomplishes more than does treatment of the disease in the individual. However, treatment will arrest the disease and prevent much suffering and blindness for individuals.

Whether the downward trend in trachoma prevalence is due to past efforts in eradicating the disease is not known. It is possible this trend may be due to other factors.

Activity Program in Sight-Saving Classes

Harriet E. Yallowley

ALL problems of interest to the progressive grade teacher are important to the sight-saving class teacher

THE sight-saving class teacher is essentially an experienced teacher charged with the responsibility of making educational opportunities available to a special group. The accepted aim is to approximate as closely as possible the work of the regular grade, adapting and modifying it to conform to the limitations imposed by the eye difficulty.

The trend of modern education is toward the so-called "progressive methods." Public schools are increasingly reaching out for the new order of things and, as is inevitable, interpretations and administrations vary, with a certain amount of confusion resulting. The thinking teacher asks herself, "In what way is the old order of things to be forsaken? Wherein lies the difference?" To answer this question a recall of our old aims and an investigation of the new objectives seem to be a good starting place.

Under the traditional type of instruction the chief concern was the transmitting of a large body of facts—the passing along of the accumulated knowledge of the race. Its success largely depended upon the passive receptivity of the child, his conformity to mass action and his ability to develop academic skill. The restriction of subject matter to narrow classifications, unrelated to each other and to the child, has been a dominant characteristic. While the good teacher of all time has independently concerned herself with the whole development of her pupils, the accepted standard was the purely academic.

The principles of the modern school are to be interpreted not so much as an abolishing of the old objectives and the substituting of new ones, but as a rearrangement of emphasis based on a new

conception of values. If the purpose of education is to promote the all around growth of the child, we must include physical, mental, moral, emotional and social development among our aims. The interdependence of all these phases of life is the basic principle upon which the new type of school is organized. Thus we see that the academic aim is not eliminated, but is shifted from its previous position of first place.

The objectives may be arranged in the following order:

1. Development and Preservation of Health, both physical and mental. In the past this has often had the least consideration bestowed upon it.

2. Social Development. The harmonious development of the individual as a member of a social group.

3. Individual Development. The opportunity to express himself, to select, experiment, judge and measure his own results in terms of his own growth. This implies the breaking of the traditional lock-step.

4. An Academic Attainment in a broad useful form. This includes all the skills and knowledges necessary for the mastery of fundamentals and tool subjects.

The sight-saving class teacher has from the first recognized this arrangement of objectives. The academic accomplishments of her pupils have always been subordinated to their physical welfare. Thus she can have no quarrel with the new régime, as it involves no change of aims, but rather signifies an extension to the regular grades of the sight-saving class teacher's guiding principles.

The work of the child psychologists has probably been the most powerful factor that has led to a changed curriculum. The study of the learning process, child interests and tendencies, has developed the philosophy of learning by doing, which is the core of the activity program. This is not rightfully entitled to be called a new principle, but rather it is a reversion to the earliest learning among primitive people. The informal acquisition of knowledge based on personal experience is the foundation upon which modern civilization has builded. To use these natural tendencies and interests of children as a starting point and so directing and guiding that learning occurs not only as a by-product, but consciously in response to a felt need, is the task of the teacher.

That all learning must be based on first-hand experience, that there is no place for drill, that textbook and formal instruction do not belong in a modern school, are fallacies. All these must be retained, but they must be presented when needed and in such a manner that they will function usefully.

The progressive method is an endeavor to follow the path indicated by the new philosophy in that it employs the native tendencies of children instead of expending effort along conflicting lines as in the old formal type of school. What are some of these tendencies? The desire for movement, for speech, for companionship, for handling things and for finding out the "why" of whatever exists. These tendencies manifest themselves in a ceaseless activity. To work in accord with child nature, the activity program seems to be the logical method, and the duty of the teacher is to provide experience which will satisfy and at the same time arouse the curiosity which leads to further investigation and a transition to formal learning.

In what way does the activity curriculum disrupt the formal program? First, since formal instruction is given only as needed, no definite time schedule can be adhered to. Spelling, for instance, may come at any time of the day when the need arises or it may not be given at all. Furthermore, if activity predominates, the periods must be longer than the traditional time allotment. If creative expression is to be encouraged, some time must be set apart for free work. The program must vary from day to day and cannot be made out far in advance

What bearing has all this upon the work of the sight-saving class teacher? Despite her difficulties in the past it was possible to know the exact time at which each child should be at a given place and the precise fact for which he was to be held responsible, or the skill which he was to develop. Her progress was definite and she could plan accordingly. A restricted course of study served as a check and guide for her work. It was possible for her to obtain from the regular classroom teacher the clear-cut assignments for the day—an arithmetic lesson, a list of spelling words, a specific topic in history or geography. Under the new system, integration of subjects, flexibility of program, individual rate of progress, all interfere with the classroom teacher's ability to give to the sight-saving class teacher the help she has been able to

supply in the past. The sight-saving class teacher's problem, therefore, undoubtedly becomes more difficult and puzzling. What to prepare and when to have it ready is a problem.

The co-operation of the regular classroom teacher is more than ever essential. The sight-saving class teacher must acquaint herself with the unit of work or project being developed in the class. She must know the aims and problems which arise during the development of the project and the activities which are carried on, together with the desired outcome. She should endeavor to have the sight-saving class child participate in as many of the class activities as his particular handicap permits. If group work is carried on it is desirable that he be included in a group where his contribution will be possible and valuable. It is the duty of the sight-saving class teacher to have him make an individual contribution of value to the class. In this way he may have the feeling that he is a valuable contributing member of the organization. Furthermore, this offers an opportunity for gaining the appreciation and co-operation of the classroom teacher, to whom the child, formerly undesired, may now appear as an asset. The greatest problem is gaining the assistance of the classroom teacher, always remembering that her work, too, is not so simple as formerly, and aid is not so easily given. Much indirect information about the activities may be gained by questioning the child himself.

The classroom teacher cannot be expected to remember the sight-saving class child and send for him when work in which he can share is being given. Probably the only solution of this difficulty is to make some pupil in the regular class responsible for summoning the sight-saving class child. There is no reason why both the assisting child and the sight-saving class child cannot be trained in discrimination and thus be able to judge when the sight-saving class child's presence is desirable. The new situation calls for greater tact, more resourcefulness, more control, wider general knowledge and greater use of handwork then ever before.

The sight-saving class teacher will find it profitable to make a study of the many recent publications devoted to the new type of school. Visits to progressive classrooms of normally seeing children and observations of the methods in actual practice are

suggested helps. A day spent in the regular grades can well furnish ideas capable of being remodeled to sight-saving class standards. In addition, the sight-saving class teacher acquires a renewed image of the environment to which she must send her pupils and of the accomplishment of normally seeing children with whom they will be associated.

All the advantages which are claimed for the normally seeing child are equally applicable to the sight-saving class child. However, some possible disadvantages may be mentioned. It may be contended that his association with the normally seeing children is restricted by the new program. It is true that most of the individual work must be done under the supervision of the sight-saving class teacher and his stay in the regular classroom is somewhat curtailed. On the other hand, his more active participation when he does return to the classroom, with the results of his individual effort, more than compensate for the abbreviated period in the room. It is hardly likely that he will feel cut off from the normally seeing group if, as previously stated, the additional time spent in the sight-saving class is devoted to some phase of the general project of his grade. It is quite likely that the difficulty of social contact may not arise at all, but, since oral expression is to be stressed, he will find himself increasingly a part of the group. Much depends upon the joint action of his teachers.

There are as yet comparatively few schools in which a progressive program of wide scope is being used. In most systems a modified form only is followed. One prevalent scheme is the setting aside of a definite period of the day, varying from one to two hours, in which the activity work is carried on. The remainder of the day is more or less devoted to formal instruction with as much correlation as possible. This seems to be the wisest plan at present, so that both children and teachers become gradually familiar with the method. Thus they gain greater capacity for working in accord with the principles involved. The gradual transition from formality to informality thwarts the possibility of too wide a swing of the pendulum and the discarding of all academic standards. The idea of freedom must still be interpreted as freedom within limits.

The sight-saving class teacher in this type of school will have

less difficulty in adjusting her schedule while at the same time she is offered all the opportunities of the activity program in a workable form.

In addition to the regular classroom activity the sight-saving class children should at all times be carrying on some project belonging exclusively to them. The activity, or project, most worth while will be that which is an outgrowth of some object, situation, incident, experience, or phase of the environment in which the children show a spontaneous interest. If it promises results of value and is capable of sustained interest for at least a month, the wise teacher develops this child-initiated project. It is always possible for the resourceful teacher to set the stage and arouse interest if spontaneous leads are lacking. The activity should appeal to a majority of the group, and while difficult enough to offer a challenge to the more advanced should be understandable to all. It should permit of many different types of activities being carried on, preferably one in which the chief sources of information are personal experiences—as the excursion or the experiment—offering a minimum of necessity for close eye work. The exhibit and the sand table are the most practical media in sight-saving classes.

Among other worth-while activities the following are desirable: clubs, dramatizations and plays, puppet shows, pets, aquaria, plants, diaries, business of various kinds, post offices, broadcasting programs, orchestras specially arranged to meet the needs for conserving sight, routine schoolroom chores, museum collections.

The problem of the sight-saving class teacher in the development of her project is somewhat different from that of the regular classroom teacher. In the regular grade an important aim is the ability to find facts rather than to accumulate them. The child is therefore progressively directed to books as a source of information and he is encouraged to locate, select, organize and present the results of his findings to the group. This involves considerable silent reading and so is not for the sight-saving class child, for whom this phase must, of course, be limited to the short article or to the reading by the sight-saving class teacher.

With respect to handwork, the sight-saving class teacher again cannot accept all types available for the normally seeing child.

Here the general rule that anything requiring close eye work must be eliminated largely determines the choice. Among the desirable types may be mentioned: Paper—torn or cut, and mounted to make the poster, frieze, picture book or stage setting, etc.; painting with long-handled brushes; paper construction for use on sand table; work with clay—modeling; work with light woods—construction of toys, boats, airplanes, musical instruments and simple furniture.

The sight-saving class teacher, in carrying out an activity program, will meet with fewer difficulties of a purely mechanical aspect than will the regular classroom teacher. Her group is smaller, her room better equipped, her curriculum requirements are less strict than those of the ordinary teacher. The sight-saving class seems to offer a suitable laboratory for experimenting with progressive methods.

Editorial

Aniseikonia

RECENTLY, the newspapers introduced the layman to a new medical term, "aniseikonia"—a defect of the eyes in which an object appears a different size in each eye. In experimental laboratories at Dartmouth College, Ames, Gliddon and Ogle have developed devices which seem to promise relief to the discomfort and disability of a certain percentage of those who have not been helped by the ordinary methods of examination and correction of astigmatism and other refractive errors or muscular defects.

It is stated that many patients with headache of various kinds, digestive disorders, fatigue after a short period of reading, and photophobia or sensitiveness to light, have not been relieved by the ordinary methods, but can be cured by adjustment of the size of the image seen by each eye, so that the retina or brain has equal pictures to fuse or combine into one.

Many oculists feel that with care and patience they can help the great majority of their patients. There undoubtedly remains a percentage, not yet determined, that is not relieved and wanders from one specialist to another and finally gives up the effort to find a relief in medicine or glasses, and adapts itself to simpler environment, reads less, relinquishes the college or the career, and is comparatively comfortable. This group comprises those who tire too quickly, who are slow readers, who have frequent headache and other disorders and whom we are prone to call functional or neurotic.

It is possible, however, that refraction is not taken as seriously as it was formerly. The crowded clinics, the urge of operative work, may have made oculists less regardful of the minor errors which we know are often the source of strain. Also, are we not prone to regard the patient who returns with the symptoms unrelieved or who wanders elsewhere, as a subject for psychoanalysis or as a victim of maladjustment to his job or place in life? It is too easy to wash one's hands of responsibility in this manner.

Every patient who enters one's office is a personal responsibility. His problems of work and endurance, his mode of life and hygiene, all are important. The eyes and their functions are parts of the whole organism and depend upon it for their nutrition and health. Encompassing this is the individual with his varying endurance and resistance to the unescapable stress of life. It is a commonplace that life is more complex and difficult than formerly. If the results of the ingenious and beautiful work of Professor Ames and his colleagues at Dartmouth add a fraction of efficiency, or lessen the burden of a few, it will be a real step forward. It is too soon, and this is not the place, for details of the method or for prediction as to the future.

In view of the wide attention that this subject has received in the press, it will interest many who are having ocular difficulties. It seems fair, then, to say that at this moment the facilities for examination and treatment are very limited. There is only one machine which is available in New York for examination, and the glasses which must be made to correct the size differences are not readily obtainable. The facilities for examination and treatment of suitable cases will, however, improve if the method proves to be as successful, as all hope it will, in giving relief to some of those who have not found it elsewhere. It should not be taken, however, that this method will supplant in any way the proven methods of examination or treatment of the eyes, but that it is accessory to them and should prove valuable to some who have not otherwise been relieved or who have been discouraged in their efforts to find relief.

We may heartily commend Dr. Ames' conservatism in withholding this definite report of what promises to be an exceedingly important and valuable step in the field of physiological optics and in the practice of ophthalmology. At the meeting of the Academy of Medicine, at which the announcement was made, Dr. Ames said:

"I feel that before aniseikonia was discovered we were somewhat in the position of the astronomers studying the solar system before all the important planets had been located. The effects of the unknown ones could be felt, but they were still unknown, and the relationships could not be worked out. They are now worked out, as it is hoped that some day aniseikonia's will be."

COLMAN W. CUTLER, M.D.

The Forum

THIS section is reserved for brief or informal papers, discussions, questions and answers, and occasional pertinent quotations from other publications. We offer to publish letters or excerpts of general interest, assuming no responsibility for the opinions expressed therein. Individual questions are turned over to consultants in the particular field. Every communication must contain the writer's name and address, but these are omitted on request

Eye Hazards in Play

A favorite among the comedy situations which always finds a responsive audience is the one which pictures a person who has just been hit in the eye by some small object. For some inexplicable reason this scene is good for a laugh at any time. Yet, far from being funny, such a situation often contains all the elements of a real tragedy for the victim. Even the most trivial accident may bring serious eye trouble if infection develops or if the inflammation spreads to the second eye, as all too frequently happens in accident cases. After all, it matters little that it may have been done in the spirit of play if the result is blindness. Yet how few people stop to think of this beforehand. How many give consideration to possible eye hazards when they select their children's toys or watch them as they improvise playthings for themselves?

To any regular reader of a daily paper some of the stories of accidents to children will have a familiar ring. For example, there is the account of the five-year-old girls, living in one of New York's suburbs, who looked so much alike that even their mother had difficulty in telling them apart until one of them had to have an eye removed after a small playfellow had shot her with a B.B. gun. Many may recall the report of a feud between two small boys which ended in a shooting and an eye tragedy for one of them.

Such stories are not rare! Hundreds of children are injured in this way during a year. In fact, air rifles, cap pistols, arrows, slingshots, and similar weapons are the most frequent causes of eye accidents to children. This fact was discovered by the National Society for the Prevention of Blindness when a study was made of newspaper ac-

counts of eye accidents to children. Contrary to the general impression, cap and blank cartridge pistols are not harmless, since the flash of flame which occurs when they are exploded is often close to the child's eye.

It may also be news to some to learn that in many cities and towns the prohibition of such articles has been made the subject of legislation. Each parent should find out if his community has such an ordinance.

Many communities also have laws prohibiting the sale and use of fireworks, yet in spite of that fact we find that they too are still a very important cause of eye accidents. Although the season for their use is extremely short, the eye damage which they cause is tremendous. By actual count it was found that more eye accidents occurred on or about July 4th than occurred during 100 days at any other time in the year. Knowing this, is it any wonder that we are impatient to have all communities pass ordinances abolishing fireworks? Or that we reserve our worst expressions of contempt for the parent who, living in a town which prohibits the sale of firecrackers, thinks it smart to purchase a supply for his child in a neighboring town which happens to be unprotected?

Bang! Will Another Eye Be Lost?

It may be well for the unwary parent to take warning against the so-called harmless varieties of fireworks. For example, torpedoes, which are frequently labelled harmless, are particularly dangerous to the eye, since the small pebbles contained in them can so easily penetrate the eyeball. Similar in type to the accidents caused by firearms and fireworks are those which are due to explosives, particularly dynamite percussion caps, gasoline and other highly explosive

chemicals. A vivid paragraph from a newspaper clipping describes what happened in one instance:

Firecrackers Have No Place in the Safe and Sane Fourth

Sharp-pointed Scissors Are a Serious Menace to Eyes

"Three boys, whose ages range from seven to 14 years, were maimed for life by the explosion of a dynamite percussion cap with which they were playing in the street last evening. The boys were in sort of a huddle when one of the group suggested that a match be applied to see what effect the flame would have on the diminutive pellet. A terrific explosion resulted and all three boys were hurled to the pavement. As a result, one boy's eye was so badly mangled that it had to be removed; his younger brother

may also lose the sight of one eye, while the third youngster had to have two fingers amputated."

Adults have a double responsibility in a case of this sort. Not only should they teach their adventuresome sons a wholesome fear of dangerous articles, but they must also see that such things are not left where they can come into the hands of children.

And, while we are considering articles which must be kept out of reach of the children, let us not forget that there are many things in common use in the household which must be absolutely forbidden to the small child of the runabout age. These are the sharp-pointed objects — knives, scissors, nails, wires, hooks, sticks, etc. To allow a small tot to cut a string with a knife is simply to court disaster. Even the older boy cannot safely be trusted with a jack-knife until he understands thoroughly the principles of safe usage.

One could go on for some time quoting further examples of activities and articles which have been found to cause eye accidents to children. There are the chips which fly about during the process of woodchopping; the blows from baseballs or golf balls; the flying parts from spinning toys which break; as well as falls, burns from acids or hot objects, etc.

But one need not be left with a feeling of hopelessness or the general impression that eye accidents are inevitable and that there is nothing he can do about it. There is much that each can do to prevent eye accidents. Some are suggested below:

First, by exercising a sort of safety censorship over the toys and play activities of their own child, parents can save him from eye disaster. They can teach him safety so that he will understand and cooperate in avoiding dangerous play.

Moreover, in their contacts with neighbors and the neighbor's children, parents will find many opportunities to pass on their knowledge.

Finally, there is an excellent opportunity for everyone to prove that he stands for law and order. He can stand back of his local police department in its effort to enforce the ordinances which are made for his child's protection and teach the child to do likewise.

Only through care can each family have a no-eye-accident record for all time!

C. Edith Kerby
Statistician, National Society for the Prevention of Blindness

Note and Comment

Shall We Stop Eye Losses?—Some 2,000 workers lose the sight of one or both eyes each year in the United States; 300,000 industrial eye accidents involving one or more days of lost time occur annually in this country, and 70,000 of them are compensable. In New York State, where, in a three-year interval, there were 7,690 compensated eye cases, the average compensation was $591. These figures, and other as forceful, are assembled by G. M. Briggs, writing a series of articles on eye protection for the *National Safety News*. Eye losses may or may not be rare in the plant, but the penalties, when they do occur, are so heavy to industry, the worker and to society that a vacillating attitude toward them is unthinkable, says this student of eye casualties.

Prevention of Blindness in the Junior Red Cross.—Although members of the Junior Red Cross in forty-eight countries have a special interest in the aid and welfare of the blind, only a few groups are aware of the efforts they are making in the prevention of blindness. In Canada, young members give financial support to the Crippled Children's Fund, under whose auspices vision testing, eye treatment and glasses are provided where needed; in New York City, Juniors make the provision of glasses possible among those public school children unable to pay for them; Japanese Juniors have established trachoma dispensaries. Although many other individual efforts are being made, all Junior Red Cross members are seeking to combat the fly, the carrier of many diseases, and especially of eye diseases in tropical countries. The need of maintaining good posture while reading and studying is understood, although its value as a sight conserver is not usually appreciated. Personal hygiene, as is implied in cleanliness and in the use of individual towels and napkins, is another method of preventing the spread of eye disease. Dr. de Lapersonne, who contributes this information on prevention activities among Red Cross Juniors, in the *Red Cross Courier*, propounds an important eye health rule: Always read in a good light. Assuming a responsi-

bility in the prevention of eye accidents which result from dangerous playthings is another road in the prevention of blindness open to Juniors, and to groups of young people everywhere.

Polar Goggles Described.—The type of goggles to protect the eyes of mountain climbers and Polar explorers has been, up to now, a makeshift affair. The special requirements of such goggles are ability to shut out the ultra-violet and infra-red rays, and to provide clear vision, particularly in the dangerous mountain fogs. Dr. J. D. Magor Cardell, British ophthalmologist, has perfected a goggle which is effective in shutting out rays of light, yet provides full range of vision, and is non-shatterable. In a recent ascent of Mt. Everest, where formerly cases of snow blindness were serious problems, among ninety climbers not a single case of snow blindness developed with the use of these goggles. The writer also recommends them for motorists who drive frequently at night, and for workmen who must have protection from heat and infra-red rays.

Summer Sessions for Sight-Saving Class Teachers.—Four universities and colleges are offering summer courses of training on the organization and administration of sight-saving classes. The following details of the respective courses are given in the order of their opening:

University College, University of Chicago, Chicago, Illinois.—June 20–July 27, 1934. Registration, June 18 and 19. Application should be made as soon as possible to Dean Carl Frederick Huth, dean of University College, Room 202, Cobb Lecture Hall (Ellis Avenue), Chicago, Illinois. Course limited to sixteen students.

University of Cincinnati, Cincinnati, Ohio.—June 25–July 31, 1934. Registration, June 21, by mail to Miss Estella Lawes, director, department of sight conservation, Cincinnati Public Schools, Heberle School, Freeman Avenue, Cincinnati, Ohio, or in person. (The course will not be given if there are not ten candidates registered on or before June 21.)

State Teachers College, Buffalo, New York.—July 2–August 10, 1934. Registration, July 2 and 3. Details may be obtained from State Teachers College, Buffalo, New York, or from Miss Matie M. Carter, state supervisor of sight-saving classes, New York State Education Department, Albany, New York.

Teachers College, Columbia University, New York.—July 9–August 17, 1934. Registration must be made in person July 5, 6, or 7. Information may be obtained from Dr. J. F. Williams, Teachers College, Columbia University, New York City, or from Mrs. Winifred Hathaway, associate director, National Society for the Prevention of Blindness, 50 West 50th Street, New York City.

Prenatal Care for the Expectant Mother Urged.—A review of the literature on "The Diagnosis and Treatment of Syphilis Complicating Pregnancy," by Norman R. Ingraham, Jr., M.D., and James E. Kahler, M.D., in the January issue of the *American Journal of Obstetrics and Gynecology*, carries the following summary: "Syphilis, in the latent stage, as it exists in most pregnant women, is difficult to detect. This means that the disease must be suspected in every case, for a successful termination of pregnancy and a healthy child cannot be expected in the presence of an active or even a quiescent infection of this nature.

"The incidence of syphilis among pregnant women in the clinic class of patient is usually between five and ten per cent. It occurs probably less frequently in the higher classes, but, because it is less often looked for, more cases are likely to escape detection. In the presence of a comparatively early untreated syphilitic infection, the infant mortality rate is increased to five times the accepted average . . . The results obtained by early treatment of the syphilitic mother to save her child are scarcely paralleled in any other medical condition. An infected offspring is seldom encountered if therapy has been commenced prior to the fourth month of pregnancy . . . Too often, in the past, when the physician practicing obstetrics or pediatrics has lost a child suffering from syphilis . . . the responsibility for the unfortunate outcome has been placed upon the patient's lack of co-operation. In the present state of our knowledge the most careful diagnostician may fail to detect an occasional case, but these failures should be very rare indeed. It is to be hoped that the future instances in which syphilis is not diagnosed in the pregnant woman or in her offspring will be those few in which the disease escaped detection although every available method for revealing its presence had been employed."

India Issues Rules for Eye Health.—Among the interesting prevention of blindness projects coming to our attention in recent days is an informative poster, issued by the Junior Section of the Indian Red Cross Society, under the title, "The Prevention of Blindness: Protect Your Eyesight." This poster is illustrated in shadings of blue and carries an illustration for each of the following rules for eye safety:

"1. Keep your hands and face clean. Wash them thoroughly with soap and clean water at least twice daily.
2. Protect your eyes from dust and flies.
3. Do not use a towel or cloth or an eye rod which have been used by other persons.
4. See that your daily diet contains either one chatak of butter, or plenty of fresh boiled but not over-boiled milk or tomatoes or green leafy vegetables.
5. If your eyes are red or if a discharge comes from them, consult a qualified doctor without delay.
6. If your eyes are sore, you may put a few drops of pure castor oil into them after washing them with clean water or boric lotion.
7. Avoid quacks, as they often damage the eyes by use of dangerous and irritant remedies or dirty instruments.
8. If your eyesight is failing, consult a qualified eye doctor at once.
9. Those suffering from syphilis or gonorrhea should obtain regular treatment by a qualified doctor till completely cured. They should not marry until the doctor approves.
10. See that the midwife puts a few drops of one per cent silver nitrate solution into baby's eyes at birth.
11. Get vaccinated and revaccinated every 7 years and also when smallpox breaks out in the locality.
12. Don't play dangerous games with sticks, stones, etc. Fireworks are always a source of danger.
13. Use goggles as protection against glare and dust and to avoid accidents in dangerous trades and amusements.
14. An expectant mother should consult a woman doctor before her delivery.

15. Read in a good light coming from behind and over one shoulder.
16. Don't hold your book too close to your eyes. It should be at least 13 inches away."

Eyesight Swindlers.—The gullibility of people, so far as their eyesight is concerned, is frequently evidenced by reports from various states of instances in which swindlers have promised to treat eye disorders by means of a miraculous radium water, for which a charge of several hundred dollars is made, "satisfaction or your money back" guaranteed. However, before the time limit on this pledge has expired, a confederate appears with a radium belt, unique for its magic powers in curing eye defects, which may be rented upon payment of a deposit—a sum representing the swindler's concept of the amount he can mulct from his victim. Strangely enough, the owner never returns to claim his wonderful belt, and the eyes of the patient remain about the same, or progress in their course, according to the nature of the trouble.

Usually, these naive believers in the great powers of radium water or radium belts are country folk. They are often far from physicians and certainly removed from eye specialists. Yet, even in the cities, they have their counterparts, as advertisements appearing in metropolitan papers and in the so-called "smart" magazines prove. Eye-drops, eye beautifiers, eyewashes, that claim not only to cleanse the eyes of impurities but to restore youthful sparkle and prevent the "morning after" look, and relieve eyestrain, are sold for $2.50 the pint. Their contents, probably as innocuous as the radium water, represent equally a tax on human gullibility and natural hope for the miraculous.

Lighting the Operation, Not the Room.—The principles of hospital illumination have been discussed and outlined frequently by illumination experts; a sound contribution on the subject by a surgeon is of special interest. Dr. A. T. Bazin, writing for the March issue of the *Modern Hospital*, declares that the high cost of medical care is due in no small degree to luxuries in operating room equipment. The operating suite is the surgeon's workroom, not the architect's and engineer's showroom. He recommends

that expensive daylight installations be discarded. "It's the wound, not the room, that needs careful lighting," is his slogan.

Functions of a Medical and Prevention Sub-Committee Defined.—Defining the prevention aspect of the work of a regional sub-committee, Dr. G. W. N. Joseph, chairman of the Medical Sub-Committee of the Northern Counties Association of the Union of Counties Associations for the Blind, in England, mentioned the eight points that have, up to this time, been covered by his group: 1. Collection of various data and statistics; 2. Investigation into industrial causes in the area; 3. Drafting a record card for use in eye hospitals; 4. An inquiry into the necessity for a residential sight-saving school for the North of England; 5. Directions for home teachers in the question of how far poverty may be a possible contributory cause of blindness; 6. Drafting a memorandum for local authorities, outlining a model comprehensive scheme for the prevention of blindness; 7. Report on the causes of blindness in babies; 8. Investigation into the records of cases of ophthalmia neonatorum and comparision with the annual reports of medical officers of health. Other activities which, in his published report to the general meeting of the Union of Counties Associations for the Blind, he considers in detail are the studies to be made into hereditary blindness and the growth of follow-up of eye patients attending clinics.

New York State Commission Seeks to Lower Ophthalmia Neonatorum.—At an open meeting of the New York State Commission for the Blind, held in the Commission's New York City offices, on March 2, a summary of the department for the prevention of blindness' five-year study of the incidence of ophthalmia neonatorum was presented and discussed by members of the Commission and by its invited guests. Present at the meeting were representatives of the State Departments of Health and Education, of the City Board of Health, and of social agencies; two ophthalmologists, as well as members of the Commission and the executive staff, entered the discussion.

The five-year study brought to light the fact that within that period in New York State nineteen babies lost their sight and

sixteen others will have seriously impaired vision for life, because of ophthalmia neonatorum. These figures do not include the numbers of children likewise afflicted in New York City. It is believed that the proportion of blindness from ophthalmia neonatorum in New York State is greater than in any other state in the nation. After considering causes and possible means of prevention, the group came to the following conclusions:

"1. Physicians must be educated to realize that ophthalmia neonatorum still exists and that adequate measures of prevention must be taken.

"2. Prenatal care should be extended and the importance of it impressed on the laity and physicians. Stressing of prenatal care must not be allowed to lessen emphasis on the use of a prophylactic, inasmuch as silver nitrate is the essential thing and prenatal care will be slower of development.

"3. Laxity in use of prophylactics by physicians is observed. Many doctors do not use silver nitrate. There was no difference of opinion that silver nitrate should be used and no substitute permitted. Physicians should be educated to practice this.

"4. Hospital superintendents should know and act according to authority and regulations governing the release of a baby until two negative smears forty-eight hours apart have been obtained.

"5. A brief, succinct leaflet should be circularized amongst physicians giving the outstanding figures for the five-year period. Proper methods of care, including thorough washing out of the eyes before instilling silver nitrate should be stated. That no time should be lost in securing smears and immediate hospitalization, together with other essential points in procedure, should be stressed. Such a leaflet might be circularized by lay organizations.

"6. In general educational publicity, the fact that medical care at birth is available to persons who are self-maintaining (as well as to indigent persons), if they cannot afford to pay a doctor's fee, should be clearly stated."

Missouri Commission Broadcasts Prevention.—Many people are hearing regularly of the activities of the Missouri Commission for the Blind, whose staff now broadcast monthly over two St. Louis radio stations. One talk puts its emphasis upon the social service

side of the Commission's program, especially upon its prevention of blindness and sight conservation aspects; the other interval on the air is used for describing the industrial program for the economic development of trained, employable, blind adults. Stimulated by the interest aroused through the radio broadcasts, and the publicity given them in local papers, many new requests for speakers on prevention of blindness and allied work have been made to the Commission by student groups and local organizations and societies.

Dr. de Lapersonne Receives Leslie Dana Award.—The Leslie Dana Gold Medal, given annually for outstanding achievement in the prevention of blindness and the conservation of vision, was presented this year to Dr. F. de Lapersonne, noted French ophthalmologist and president of the International Association for Prevention of Blindness, at the annual meeting of the Association in Paris. Dr. de Lapersonne is the second European to be awarded this highly prized medal; the late Dr. Ernst Fuchs of Vienna received it in 1929. A selection for the honor is made each year by the National Society for the Prevention of Blindness in co-operation with the St. Louis Society for the Blind, through which the medal is offered by Mr. Leslie Dana of St. Louis. Dr. Park Lewis, vice-president of both the National Society and the International Association, made the presentation to Dr. de Lapersonne. The conditions of the Leslie Dana Medal award set forth that it is to be made for "long meritorious service for the conservation of vision in the prevention and cure of diseases dangerous to eyesight; research and instruction in ophthalmology and allied subjects; social service for the control of eye diseases; and special discoveries in the domain of general science or medicine of exceptional importance in conservation of vision."

Millions for Compensation—Protection for $3.21 per Employee.—In a Wyoming coal mine employing 1,742 workers, 11 eyes were nearly or entirely lost over an eight-year period. Not so many eyes lost, for those who still have theirs, but a great loss to those unlucky few whose sight was thus impaired, and too high a proportion for the mine. A sight conservation program—including vision

testing and fitting with corrective glasses where necessary, provision of the most efficient type of goggle for the type of work, and the shifting of those employees with markedly poor eyesight to less hazardous positions—shows, in a one-year period, not a single eye injury. The cost of this vigorous and efficient eye protection program has amounted to exactly $3.21 per employee, including the cost of eye examinations by an oculist and the filling of prescriptions for glasses where they were needed.

That it is possible to provide eye protection, at a cost infinitely cheaper to the employee, the employer and society, than compensation for eye accidents needs even greater emphasis than has been placed upon it, in view of the report of the director of the Division of Workmen's Compensation of the New York State Department of Labor. Eye injuries in New York cost more than a million dollars a year in compensation awards; three of every hundred awards are for eye injuries; of the 3,000 cases compensated, one-third resulted in a permanent loss or impairment of vision.

Safety Glass Legislation Growing.—The marshalling of cold, indisputable facts on the amount of damage done by splintering, flying glass in automobile accidents will act as a special impetus toward preventing such calamities in the future. Morgan T. Ryan, registrar of motor vehicles in Massachusetts, has made such a listing in the annual report of the Registry of Motor Vehicles for Massachusetts. Figures for that state show that of the 6,489 cases investigated in detail (16 per cent of the total number of accidents), in 1932, cuts by broken glass were present in the case of 78 fatalities and in 933 non-fatal accidents. In 1933, there were 13 killed and 981 injured in about the same number of investigated accidents.

New York, Pennsylvania, New Jersey, Massachusetts, Michigan and Nebraska have already enacted laws demanding for their citizens the protection of non-shatterable glass in motor vehicles; Iowa has recently passed a similar law, while bills are now before the legislatures of Kentucky, Virginia and the District of Columbia, which would make the use of non-shatterable glass mandatory in automobiles. With the mounting toll of automobile accidents in the nation, such a step to eliminate an unnecessary hazard should be taken by every state.

Sight-Saving Classes Urged for Spain.—Coincident with the rapid advance of social philosophy in Spain are the growth and expansion of educational facilities. In a recent issue of *Los Ciegos* (Madrid), Dr. J. Arjona urges the necessity of educating partially seeing children in sight-saving classes. Dr. Arjona advances the conventional arguments in favor of this type of special education, describing the already established classes in England, the United States, Germany, Hungary, Austria and other countries. He concludes with the following plea:

"In our country nothing has been done in this direction until now, although in recent years some leaders have given thought to the establishment of such type of school; because of the changes in the ministry of public instruction, which have made progress difficult, the project has not gone ahead.

"We hope that if, as it appears, we want education among our people to be extended to all, without depriving anyone of its benefits, some attention will be given to the problem of those with defective vision, putting them in the position to acquire an education and giving them an opportunity to make the most of their intelligence; who can foretell the benefit that will result to the future of the nation?"

Dr. Bedell Gives Comprehensive Lecture on Prevention of Blindness.—"Causes and Prevention of Blindness" was the subject of the Hermann M. Biggs Memorial Lecture, given by Dr. Arthur J. Bedell, at the New York Academy of Medicine, on May 3, 1934. Dr. Bedell's paper covered a very wide field, and many of the interesting points that he made were of necessity not developed. Taking the causes of blindness in their chronological order, he showed that pregnancy, with its threat of abortion and toxemia, might cause blindness; birth, with the possibility of pyogenic infection and the hazard of trauma, as well as developmental factors, is a time when blindness might occur. Systemic disease—notably syphilis—is a frequent cause of blindness, although not always immediately apparent.

Attempting to show the delicate borderline between hereditary and environmental causes of blindness, Dr. Bedell mentioned the diseases, cataract and glaucoma, both of which are usually con-

ceded to be hereditary, although apparently isolated cases are frequently met. Detachment of the retina, which may occur at any time and in any type of eye, most often is found in the nearsighted eye. Accidents, at play in childhood, in sports, and in industrial pursuits, are menacing causes of blindness throughout life, as are eyelash dyes and depilatories which have been known to cause blindness in women.

Dr. Bedell stressed the rôles of the ophthalmologist, the obstetrician, the family physician, the educational agencies, the public health organizations, the social agencies, and eugenics groups in the co-operative movement for the prevention of blindness, all of whom must unite under the guidance of organized medicine. Preventive measures that he recommends are: sterilization of the unfit, with premarital health certification; better prenatal care to prevent the development of congenital syphilis and gonorrheal infection; (he insists upon the importance of using the only reliable prophylactic against ophthalmia neonatorum—silver nitrate). Prevention of accidents in childhood, better lighting in the homes and schools, physical examinations, both of the preschool and school child, by the family physician, the organization and best utilization of sight-saving classes for those with seriously defective vision, are steps recommended for prevention of eye difficulties during school years.

Methods of treating cataract and glaucoma and the great advance in the treatment of detachment of the retina are further steps in preventing blindness from these diseases. He concluded that the great task of prevention is one of the opportunities and responsibilities open to physicians. The movement to conserve sight owes a great debt to school inspection, which has helped to locate children needing special eye care; to the organizations fighting veneral disease, which is such a great cause of blindness; and to the National Society for the Prevention of Blindness, for its co-ordination and interpretation of sight conservation measures.

Enlightenment First Step in Prevention of Disease.—"Syphilis, thriving on secrecy, false modesty, and ignorance, has become one of the major causes of death in the United States. Its control can be effected only through an enlightened public," says Dr. A. F. Hall, assistant director of the Life Conservation Division, Lincoln

National Life Foundation. One means of encouraging public knowledge of the ravages of the so-called venereal diseases is to acknowledge the diseases by their names, rather than by labeling them "social diseases," or "venereal diseases." Since it is estimated that forty per cent of syphilitic infections are acquired through other than illicit sex relationships, it is obvious that the stigma attached to the disease is unjustified. Unemotional consideration of the disease will help to bring knowledge of its prevention and treatment more completely before the public.

Closely approximating this demand for removing the onus of a widespread disease is the action of the Public Health Council, at its meeting in New York City, on March 16, in unanimously adopting the following resolution relative to the definition of ophthalmia neonatorum as used in Section 343–p, Article XVII–B, of the Public Health Law:

"WHEREAS, the term ophthalmia neonatorum as used in the Sanitary Code includes types of acute suppurative conjunctivitis of the newborn other than those due to gonococcus infection, and

"WHEREAS, under Section 83 of the Public Welfare Law, the public welfare district must provide necessary medical care for all persons under its care, and for such persons otherwise able to maintain themselves who are unable to secure necessary medical care, except in so far as, in cases of communicable disease that duty may be imposed upon the health officer, and

"WHEREAS, under Section 343–p, Article XVII–B, of the Public Health Law, boards of health or health officers are obliged to provide medical care for persons suffering from venereal disease who are unable to pay for treatment, and

"WHEREAS, confusion has arisen in the past as to the provision of medical care for ophthalmia neonatorum cases because of initial uncertainty as to the organism concerned, and since disastrous results might follow, if the treatment of such cases were delayed until laboratory reports had been received,

"BE IT RESOLVED, that ophthalmia neonatorum is not to be considered a venereal disease in the sense that this term is used in Section 343–p, Article XVII–B, of the Public Health Law."

Social Service in Eyesight Conservation.—The Committee of Medical Social Eye Workers, sponsored by the American Association of Hospital Social Workers and the National Society for the Prevention of Blindness, met in Kansas City, Missouri, on May 24, during the National Conference of Social Work. Miss Eleanor P. Brown, secretary of the Committee, acted as chairman of the meeting. The following papers were presented: "The Rôle of Medical Social Service in Preventing Blindness," by William M. James, M.D., St. Louis, Missouri; "Possibilities for Sight Conservation in Community Work," by Miss Dorothy Hosford, Prevention of Blindness Department, Pennsylvania Association for the Blind, Pittsburgh, Pennsylvania; "Possibilities for Sight Conservation in Hospital Work," by Miss Eleanor Lee Hearon, eye social worker, Colorado General Hospital, Denver, Colorado.

National Society Notes.—The National Society has the pleasure of announcing the election to its Board of Directors and Executive Committee of Mr. Mason H. Bigelow, of New York. Mr. Bigelow has long been actively interested in the affairs of the Society, and brings to its Board a wide experience in its business management as well as a profound enthusiasm for its undertakings.

In accordance with the rule of Johns Hopkins University, which requires retirement at the age of seventy, Dr. William H. Wilmer, one of the Society's Directors, resigned from the post of director of the Wilmer Ophthalmological Institute and as professor of ophthalmology. The Society looks forward to still further opportunity of having his personal counsel and assistance.

Mr. Lewis H. Carris, managing director, who with Dr. Park Lewis, vice-president of the Society, attended the annual meeting of the International Association for Prevention of Blindness, in Paris, took the opportunity to confer with various European authorities in the prevention of blindness movement. He was present also at a meeting in London of the English Prevention of Blindness Committee. Mr. Carris represented the Society at a dinner given, in Paris, to the delegates to the conferences of the International Association for Prevention of Blindness, the International Organization for the Control of Trachoma, and the committee of the Fifteenth International Ophthalmological Congress.

Mrs. Winifred Hathaway, associate director of the Society, has been maintaining and developing contacts in various parts of the country for the promotion of sight conservation work. At New York University, in New York City, she addressed the child hygiene class on various aspects of prevention of blindness; in Baltimore, at the annual meeting of the Maryland Society for the Prevention of Blindness, she spoke on "Problems Suggested in Sight Conservation Work." At a meeting of the Massachusetts Sight Conservation Society, in Boston, Massachusetts, she discussed vocational guidance as it applies to sight-saving classes. The question of establishment of sight-saving classes in Louisville Public Schools took her to Louisville, Kentucky. At the Alabama Conference of Social Work, Mrs. Hathaway will discuss eye protection for the physically handicapped; she will also visit schools in Birmingham and Montgomery and confer on sight-saving class needs.

At the National Conference of Social Work, held in Kansas City, Missouri, Miss Eleanor P. Brown, associate director, represented the Society, and participated in the meeting on "Social Service in Eyesight Conservation."

Co-operating with the New York Tuberculosis and Health Association, the Society has sponsored several radio talks on eye health given by Dr. Le Grand H. Hardy, ophthalmologist and member of the Advisory Committee of the Society, Mr. Theodore O. Yoder, staff associate, and Mr. David Resnick, director of publicity.

Miss Mary Emma Smith, R. N., director of nursing activities, has represented the Society at several national conferences of note; at the Biennial Nursing Convention, in Washington, D. C., she conducted two demonstrations of vision testing of young children; at the National Conference on Fundamental Problems in Negro Education, also held in Washington, in her capacity as member of the advisory committee of the Conference she spoke to several groups on prevention of blindness. Other meetings include the Metropolitan Nursing Service, in Jersey City, New Jersey, Simmons College School of Nursing, Boston, Massachusetts, Faulkner Hospital, Jamaica Plain, Boston, Massachusetts, and the Vermont State Nurses Association, in Pittsford, Vermont, where Miss Smith

discussed prevention of blindness and sight conservation from the nursing angle.

Dr. Anette M. Phelan, staff associate, has visited the State University at Bloomington, Indiana, Peabody College, Nashville, Tennessee, and Eastern State Teachers College, at Richmond, Kentucky, where she co-operated with administrative officers and teaching staff in planning units of study in eye health which are to be incorporated in existing hygiene, psychology, and education courses.

Current Articles of Interest

The Safe Plant is Well Lighted, A. B. Oday and Alston Rodgers, *National Safety News*, March, 1934, published monthly by the National Safety Council, Chicago, Ill. "The necessity for aiding the eyes is probably greater today than ever before, because present-day living conditions impose a heavy tax on our powers of vision. . . . The products of civilization, while lifting burdens from backs, have imposed greater strain on eyes, minds and nerves," say the authors, and proceed to demonstrate how better lighting benefits every phase of plant production, although its operating cost is only three-tenths of one per cent of the total cost of production. Proper plant lighting, besides being of inestimable value to plant efficiency, reduces accidents and prevents spoilage of tools and materials.

The Significance of Eye Conditions in General Welfare Work, Ruth B. McCoy, R.N., *Social Welfare Bulletin*, February, 1934, published monthly by the New York State Department of Social Welfare, Albany, N. Y. An outline of hygiene of the eye, this brief article discusses correction of refractive errors, proper lighting, and systemic diseases in relation to sight conservation.

These Others, E. Chesley Allen, *Serving Sight*, February, 1934, published by the Canadian National Institute for the Blind, Toronto, Canada. Description of two classes for partially sighted rural children, established in the resident Halifax School for the Blind. The writer says that although the training of blind and partially sighted children in the same school is not theoretically ideal, the frank recognition of the differences between the sighted and the blind has led to a happy adjustment for both groups and given the partially sighted children opportunity for education which would otherwise be denied them.

Eye Injuries in the East Texas Oil Fields, V. R. Hurst, M.D., *Texas State Journal of Medicine*, February, 1934, published monthly by the State Medical Association of Texas, Fort Worth,

Tex. "When an oil field develops in a community," comments the writer, "a great increase in all forms of eye injuries is to be expected, especially of intraocular foreign bodies. . . . In the localization of foreign bodies within the eye, contact markers and injections of lipiodol or air in Tenon's capsule are valuable aids. In the removal of foreign bodies from the vitreous the scleral incision has given good results."

Sight Conservation in a School Health Program, Mary Emma Smith, R.N., *Public Health Nursing*, April, 1934, published monthly by the National Organization for Public Health Nursing, New York, N. Y. Reviewing the objectives and aims of eye health as an intrinsic part of the school health program and defining some of the weaknesses in putting these into effect, the writer concludes: "It would be interesting to see what could be accomplished in a school system in protecting the health of the children if the latent strength in the community could be used in a united effort. This would not necessarily call for the employment of specialists, but it would call for leadership in mobilizing and using all the agencies in the community—the health department, medical profession, social agencies and civic organizations."

Lighting in Textile Mills, E. L. Elliott, *Textile Bulletin*, March 15, 1934, published weekly by the Clark Publishing Company, Charlotte, N. C. Outline of typical problems in lighting in textile plants, and application of principles of lighting to their solution.

The Menace of Hereditary Blindness, J. Myles Bickerton, M.A., F.R.C.S., *British Medical Journal*, January 20, 1934, published weekly by the British Medical Association, London, England. Estimating that nearly a quarter of all blindness is hereditary, the author traces the laws of inheritance of such eye diseases as high myopia, retinitis pigmentosa, optic nerve atrophy, congenital cataracts, ectopia lentis, glaucoma, blue sclerotics, glioma, and maculocerebral degenerations. He offers as a solution certain remedies, and he concludes: "In Mexico the State of Vera Cruz has put into effect laws for the legalization of birth control, sterilization of certain criminals and mental defectives, prevention of hereditary ail-

ments where practicable, and the prevention of marriage by persons who are mentally deficient or physically or economically unfitted to have children. How long must we in England continue with our present inhuman methods?"

Visual Results in Cases of Intra-Ocular Foreign Body, Walter F. Duggan, M.D., *Archives of Ophthalmology*, December, 1933, published monthly by the American Medical Association, Chicago, Ill. A study of eyes penetrated by a foreign body, to discover the results in terms of visual capacity, does not show definitely whether vision decreases after the removal of the foreign matter; however, the author notes, if siderosis is present at the time a foreign body is removed, it is probable that vision will continue to deteriorate. A scleral wound, either operative or accidental, seems definitely to favor the development of detached retina, a vitreous exudate, or both.

The Testing of Visual Acuity, C. E. Ferree and G. Rand, *American Journal of Ophthalmology*, January, 1934, published monthly by the Ophthalmic Publishing Company, St. Louis, Mo. This first article in a series of studies of refraction testing discusses factors in the sensitive use of the test for detection of errors of refraction. The authors find that refraction tests should not be restricted to the conditions which give the best reading ability, but should include also those which test primarily the clearness of the image formed on the retina.

Problems in the Physiology of Visual Acuity, Francis Heed Adler, M.D., *Archives of Ophthalmology*, January, 1934, published monthly by the American Medical Association, Chicago, Ill. In a thorough dissertation upon the light sense, the author points out that visual acuity, as tested with the Snellen charts, is not a test of the various retinal functions alone but involves many other physiologic and psychologic factors. He adds that the extent and severity of a lesion in the fovea cannot be measured accurately, and its progress cannot be satisfactorily noted with the present crude methods. The evidences of dissatisfaction with the reading of letters as a quantitative measure of retinal function will probably

result in the development in the near future of tests which analyze more closely the physiologic functions of the retina alone.

The Use of Calcium Gluconate in Diseases of the Eye, Georgiana D.Theobald, M.D., *American Journal of Ophthalmology*, November, 1933, published monthly by the Ophthalmic Publishing Company, St. Louis, Mo. Citing literature on the administration of calcium in eye diseases, and drawing upon recent case histories, the author concludes that the action of calcium gluconate is similar to that of calcium chloride, but less toxic. It has been found to be very effective in phlyctenular disease and in certain types of uveitis.

The First Medical Refractionists, Harry Friedenwald, M.D., *Archives of Ophthalmology*, January, 1934, published monthly by the American Medical Association, Chicago, Ill. At the beginning of the nineteenth century, physicians were warning patients against the dangers of wearing spectacles; the development of the scientific study of refraction by physicians and by physicists and physiologists which occurred during the first three-quarters of the nineteenth century has, in large measure, contributed to the advancement of knowledge of diseases of the eye; and it has influenced the increase of scientific precision in cultivating care in and correctness of observation.

Eyes and the Library, Olive Grace Henderson and Hugh Grant Rowell, M.D., *Library Journal*, March 15, 1934, published semi-monthly by R. R. Bowker Company, New York, N. Y. While developing the spiritual and esthetic sides of human welfare, the library in general is guilty of having neglected the physical. Three great faults in most libraries, say the writers, are "poor ventilation, bad lighting and damnable seating." Considering the problems of lighting and seating, it is found that modern lightmeters have done away with the need for measuring light by rule of thumb; seating, too, is important in eye comfort, since good and comfortable posture forces the eyes into proper relationship with the book. To make library reading and research more physically ideal, especially in school libraries, the authors describe an individual reading unit, having a sloping reading stand, a flat-topped section for note taking, an adjustable posture chair, and a local light source to supplement the general lighting.

Modern Industrial Lighting, J. W. Howell, *Industrial Welfare and Personnel Management*, February, 1934, published monthly by the Industrial Welfare Society, London, England. Industrial reconstruction, which is forecast by trade observers, must be met by improved working conditions. The writer discusses the importance of providing good industrial lighting for the promotion of efficiency and the reduction of accidents and spoilage. A table of lighting standards is presented, giving values to be maintained for specific tasks; and the gross sins of lighting—glare and shadows—are explained. The importance of careful upkeep of a lighting system and of the provision of good equipment is pointed out.

Endocrines in Ophthalmology, Louis Bothman, M.D., *Illinois Medical Journal*, March, 1934, published monthly by the Medical Profession of Illinois, Oak Park, Ill. The relation between hyperthyroidism and exophthalmos has been recognized for more than a hundred years; the writer describes three cases of exophthalmos following correction of the thyroid dysfunction through thyroidectomy; in cases of progressive myopia, combined with low metabolism, increasing the thyroid arrested the progress of the myopia. The rôle of the parathyroids in calcium metabolism and tetany has been well established, and the resultant production of cataract in rats after parathyroidectomy, as well as the occurrence of cataracts in humans after such an operation lends due weight to the relationship between cataract and endocrine function.

Ophthalmology as an Aid in the Diagnosis of Systemic Disease, William F. Hardy, M.D., *Weekly Bulletin of the St. Louis Medical Society*, February 9, 1934, published weekly by the St. Louis Medical Society, St. Louis, Mo. "Though the eye may be of service as an aid in the diagnosis of general disease, it is equally or more true that a general examination is of great value in clearing up the etiology of ocular conditions," says the writer. Eye signs of systemic diseases are often first symptoms of danger, and "if ophthalmology can be of help in the making of an early diagnosis and thereby prevent or delay the ravages of disease, it has justified its existence as a definite specialty and as a handmaid of general medicine."

Book Reviews

BLINDNESS AND THE BLIND IN THE UNITED STATES. Harry Best, M.A., Ph.D., LL.B. New York: The Macmillan Co., 1934. 714 pages.

This book was not needed to add to the reputation of its author. From the publication, in 1919, of his book on *The Blind* he stands at the head of writers on this subject. But in the fifteen years that have since elapsed, the shifting in legal provisions for the blind, the number of people sympathizing with the misfortune of the blind and desiring to help them, the new understanding of what the blind need and of what can be done for them, have so completely changed that a new presentation of this subject was urgently needed; and the book had to be nearly double the size of its predecessor.

This is more than a book. It is a one-volume encyclopedia of blindness, and an index catalogue of the literature that relates to the subject. The part of the book to be read is well printed, in good type, on good paper; and its weight has been kept down to the limits for convenient handling. The reference notes are printed in fine type, to make it possible to print so much bibliographic information in one volume of moderate size. But the grouping of subjects and references is so well done that one can find what he wants to refer to, with comparatively little search.

The grouping of information into fifty-five chapters, each with its appropriate heading, and the alphabetic index, of ten double-column pages, make this a model reference book. Any one who wants to know about the blind must have access to this book, and the number of people who do want to learn about the blind makes it essential to have it in every up-to-date library.

What is most essential about this work is that the facts here brought together, the arrangement of them, the philosophy that has assembled them and sees their true meaning, all point directly to the supreme importance of preventing all blindness that can be prevented, and to the need for a better understanding of the blind, and their problems, on the part of those who have sight. Every

habitual reader of this magazine will find this book interesting and valuable—both to read the parts he is now particularly interested in, and to have at hand to consult, when some other aspect of blindness attracts his attention.

EDWARD JACKSON, M.D.

THE INJURED WORKMAN. G. F. Walker, M.D., M.R.C.P. Foreword by W. H. Maxwell Telling, M.D., B.S., F.R.C.P. Bristol: John Wright & Sons Ltd., 1933. 190 p.

Of necessity, this review will be limited to the ophthalmic aspects of the problem of the injured workman, since the nature of the REVIEW indicates the special interest of its readers. However, anyone concerned with eye injuries in industry has an essential concern with workmen's compensation.

The general practitioner lives under the shadow of the Workmen's Compensation Acts which, in the English-speaking countries, are very similar. He is responsible for the accurate diagnosis and correct treatment of the various injuries to which the workman is liable and which he sustains and for the accurate and detached presentation of his claims before those individuals, corporations, employers, insurance companies, and the courts, whose duty or liability it is to settle the all-important question of compensation. It is better to be informed than to wait until practical knowledge is thrust upon one by actual experience in court.

The general practitioner sees and is mostly called in to diagnose, treat and give his opinion upon the amount of damage in these cases. He will find that most of his patients are ordinary and ordinarily honest. However, there are a large number in which the expert with his greater experience of special and difficult cases is of more assistance in the diagnosis and the extent of damage. I always admire the courage with which certain sensible judges, a select minority, take the advice of the experts. Although the majority of cases are simple and straightforward, yet there is a complex pressure on the workmen of whom certain types are clearly differentiated: (1) The person who honestly believes the injury to be more serious than it actually is; (2) the reluctant suffering from ergophobia (in plain English, "laziness"); and (3) a class to which malingering is the only accurate description.

From the employers' side, there is a reluctance to reinstate men in work, as in many cases there is no light work available and they are familiar with the difficulty of getting men off such work, once they have tasted its sweetness. The workman drifts into what is often a long-drawn-out period of idleness and financial suffering which is demoralizing. The insurance companies likewise create a pressure system usually to get rid of every claim in the shortest time and the cheapest way possible. The courts have so construed in favor of the workman as to create a class dependent upon compensation, which surely could never have been originally contemplated by the framers of the acts.

The question of acceleration or aggravation of a pre-existing condition of constitutional disease or infirmity from an accident is constantly arising. The malingering tendency of the British workman, and probably also workmen of other nationalities, is a regrettable characteristic motivated by cupidity.

The law generally lags behind medical opinion; it requires a clear probability of the relationship of the accident and its effects to the injury. In order that a workman may become entitled to compensation, three primary factors must be established: (1) He must suffer a personal injury; (2) that injury must result from an accident; and (3) the accident must arise out of and in the course of the man's employment. In addition to this, the question arises, "Was it part of the injured person's employment to hazard, to suffer, or to do that which causes injury?" In an emergency, the ordinary scope of a man's employment is extended.

Ophthalmic evidence is becoming more and more the province of experts, and a thorough examination by all methods must be made, including the ophthalmoscopic, the slit-lamp, and the X-ray pictures in many cases, as the question will be asked in court whether or not such examinations have been made. Aside from direct injuries to the optic nerve causing loss of sight, there are cases of injury to the brain in which no atrophy is apparent and the pupillary reactions are normal to light and accommodation but these are exceedingly rare. The actual loss of vision in the one-eyed man is given as loss of: (1) one-sixth of the total visual field of the two eyes, (2) all stereoscopic vision, (3) partial time through complete loss of power to judge distances, (4) the reserve of safety in the

event of an injury to the other eye. A young man apprenticed in a skilled occupation may regain in a year or so enough perception of depth to work adequately, whereas an elderly man may not do so. In most trades, a young man with one eye may be as good as a two-eyed man. The percentage loss in ability for loss of vision is accepted as that of the U. S. Veterans Bureau as given in Würdemann's *Injuries of the Eye*. The mathematical formula of this author is also accepted.

On the whole, this work is so clearly written and uncomplicated by technical terms that it is a reliable and easy guide for the use not only of physicians but of compensation boards and the courts. In its preparation, Dr. Walker had the collaboration of J. Harvey Robson, barrister-at-law (Law); R. E. Jowett, M.D., Ch.B., D.L.O. (Ear, Nose, and Throat Surgery); Stanley Ritson, M.B., M.S., B.Sc., F.R.C.S. (General Surgery); John Foster, M.A., M.B., F.R.C.S., D.O.M.S. (Ophthalmic Surgery). The price of the book is moderate, only six shillings.

HARRY VANDERBILT WÜRDEMANN, M.D.

INDIVIDUAL DIFFERENCES IN NORMAL COLOR VISION—A Survey of Recent Experimental Work (1910–31). W. O'D. Pierce. Medical Research Council, Reports of the Committee upon the Physiology of Vision, XI. London: His Majesty's Stationery Office, 1933. 96 p.

This pamphlet of less than 100 pages is the fifteenth of the Research Council's bulletins dealing with vision. Like the others, it is a survey of the most productive period (1910–31) of this subject.

It is technical in language and substance to such an extent that one not constantly working in the field of psychology and physiology feels the need of a glossary of technical terms in order to help him interpret the substance of the paper less laboriously. While the pamphlet is of the very highest value and will certainly hold an important position in the literature of color vision, there are occasional defects which should be corrected in later printings —for instance, on page 33 we find a statement which implies that the foveal field of vision is 2° in diameter. One is impressed with the small groups of subjects studied in the different types of experiments.

Of particular interest to the ophthalmologist is the survey of literature dealing with differences in color fields (Section V, page 55). Most of these references are to the studies of Ferree and Rand or their co-workers. Of considerable interest, also, is a reference on page 83 to the influence of color on acuity of vision, speed of vision, and effort to sustain vision.

This report is essential to anyone interested in the study of vision in relation to color.

JOHN N. EVANS, M.D.

A STUDY OF SIGHT-SAVING SCHOOLS. J. Sexe, M.D. Translated and condensed from a review appearing in *Valentin Haüy Revue*, September, 1933.

The extensive study of Dr. Jean Sexe comes at an appropriate moment, when Paris has at last decided to follow the example of Strasbourg and so many great foreign cities, by opening under the direction of Prof. de Lapersonne, schools for the partially sighted. A study of the question is singularly auspicious.

We particularly appreciate Dr. Sexe's first chapter, "What Has Been Done for Children with Poor Sight?" in which he covers the history of the first steps taken for the protection of children with poor sight in foreign countries, especially in England, the United States and Germany, the countries that have taken the lead in this field. This chapter is especially timely in that it may stimulate our organizers through the example of the work of others. Even Switzerland and Poland have outstripped us in this direction. Dr. Redslob, in Strasbourg, was the first to open a special school on the Continent, in 1911. Paris should have at least forty classes for amblyopes; she has exactly one, which has been in existence for only a year.

We again congratulate Dr. Sexe on his bibliography, which fills no less than ten pages in small type and which affords an extremely important source of information for fuller study on the question.

I should like to draw attention to the last two chapters. In the last chapter, the author enumerates the occupations, positions and professions which persons with defective vision may follow successfully; the critical survey which he makes demonstrates the varied background which Dr. Sexe has brought to his work. He reviews,

notably, under what conditions the positions of baker, cook, gardener, masseur, musician, operator of blast furnaces, sign painter, painter, sculptor, professor of modern or ancient languages, are possible. One might prefer, perhaps, that the author's preferences be more firmly marked, in view of his own experiences. But Dr. Sexe would answer, perhaps, that since the foreign schools have so completely neglected vocational teaching (it has absolutely no place in the curriculum of the schools in the United States), the time has not yet come for a thorough, objective study.

In the chapter before the last, he considers the question of rural children with defective vision, a difficult and highly controversial subject. In a city, it is easy, or relatively easy, to group as day scholars those children with defective vision. In the country, this solution is impossible and, in most of the countries where sight-saving classes are considered, the question has not been answered. In general, the economic consideration has prevented the development of special boarding schools for these pupils. I believe that we are in general agreement here with Dr. Sexe. Certainly it would be a shame—indeed it would be criminal—to transfer these children to the city, to expensive boarding schools, under the pretext of giving them primary instruction only a little better. Let us find the best means of giving to those intelligent children of the country the education which they deserve. To my idea, the special schools for the blind are sufficient at this moment. But let us avoid, as theoreticians, correcting the smaller evil by one even greater.

Briefer Comment

NEW ALIGNMENTS BETWEEN PUBLIC AND PRIVATE AGENCIES. Linton B. Swift. New York: Family Welfare Association of America, 1934. 72 p.

The depression and the tremendous increase in the need of family welfare and relief programs have, of necessity, given rise to a new concept of the relationships between public and private agencies in a community. Taking an average community—Manton—the author shows the new problems involved and the new philosophy applied in concrete situations.

LIFE-GIVING LIGHT. Charles Sheard, Ph.D., Sc.D. Baltimore: The Williams and Wilkins Company, in co-operation with The Century of Progress Exposition, 1933. 174 p.

It is not often that a scientist is able to impart his knowledge to the average reader, without some trace of condescension; Dr. Sheard's small book, written for the popular Century of Progress audience, succeeds in carrying over the accuracy of observation and conclusion of the scientist in a manner to arouse the enthusiasm of the lay reader. Lights, sight, color, energy, growth, and a philosophy of life evolving from the concept that light—the sun—is the center of life and the force that makes life continue, are ably and excitingly presented.

BULLETIN OF THE OPHTHALMOLOGICAL SOCIETY OF EGYPT, Vol. XXVI, 1933. Cairo, Egypt: Misr Press, 1933. 256 p.

In a country where ophthalmologic problems are of special importance, the reports of its ophthalmological society cannot lack interest. Trachoma and acute ophthalmias received special emphasis, with Dr. Peter K. Olitsky of the Rockefeller Institute for Medical Research contributing a paper on "Bacteriological Studies on Spontaneous Conjunctival Folliculosis of Monkeys," but cases of more general occurrence—cataract, detachment of the retina, ocular palsies—are also described in this comprehensive volume.

A GLOSSARY OF FRENCH MEDICAL TERMS REFERABLE TO THE EYE. Ellen Kerney, A.M. New York: Institute of French Studies, Inc., Columbia University, 1934. 209 p.

For the librarian, the translator, and the student of French ophthalmological literature, this compendium of French ophthalmological terms will prove especially valuable.

DIRECTORY OF AGENCIES FOR THE BLIND, 1934. London: National Institute for the Blind and Gardner's Trust for the Blind, 1934. 130 p.

A source of details of voluntary agencies, schools, workshops, and societies for the general welfare of the blind in Great Britain, the British Empire, and other countries, together with general information on legislation, provision of embossed literature, charitable agencies, a bibliography, and other matters likely to be useful to the worker for the blind.

HOME HYGIENE AND CARE OF THE SICK. Jane A. Delano, R.N. American Red Cross Textbook. Fourth Edition, Revised. Philadelphia: P. Blakiston's Son and Company, Inc., 1933. 391 p. Ill.

A comprehensive textbook on personal hygiene and home care of the sick and well, revised to include the most recent available statistics and accepted theories regarding the prevention and control of communicable diseases along with the much needed emphasis on good health. Particular attention has been given to the infant and preschool child, and added material in the field of mental health greatly augments the value of this handbook. The style of presentation is readable and easily understood by the average person without medical training, and the material is so arranged as to be immediately accessible for reference.

Contributors to This Issue

Dr. William Campbell Posey, whose *Hygiene of the Eye* has been so widely used, will be remembered by readers of the REVIEW for his article on "The Evolution of the Cataract Operation." He is an enthusiastic chronicler of ophthalmic history, and is co-author of *The Wills Hospital of Philadelphia*, a record of one hundred years of ophthalmologic progress.

Miss Mary Emma Smith, R.N., is director of nursing activities of the National Society for the Prevention of Blindness.

Dr. C. E. Rice, surgeon in the United States Public Health Service, and medical officer in charge of the trachoma field service, with headquarters at Rolla, Missouri, contributes another interesting account of trachoma work in the United States.

Miss Harriet E. Yallowley, who is teaching in the elementary school system in Newark, New Jersey, took the summer course of training for sight-saving class teachers last year at Teachers College, Columbia University.

As special consultant for the National Society, **Dr. Colman W. Cutler,** member of the Board of Directors, generously gives much of his time to interpreting for lay understanding medical knowledge on ophthalmic subjects.

Among the book reviewers: **Dr. Edward Jackson** is consulting editor of the *American Journal of Ophthalmology;* **Dr. Harry Vanderbilt Würdemann,** practising oculist in Seattle, is the author of *Injuries of the Eye;* **Dr. John N. Evans,** director of research at the Brooklyn Eye and Ear Hospital, needs no introduction to readers of the REVIEW.